

作成承認印

配布許可印



SB-50DX

FSA03201

REPAIR MANUAL

Nikon | NIKON CORPORATION
Tokyo, Japan

Recycled paper
再生紙を使用しています

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The chart for inspection of focusing light

Specification

Electronic construction	Automatic Insulated Gate Bipolar Transistor (IGBT) and constructionSeries circuitry.																												
Guide number (ISO 100, m/ft.)	<table><tr><td>Zoom-head position</td><td>14mm</td><td>24mm</td><td>28mm</td><td>35mm</td><td>50mm</td></tr><tr><td>Guide number</td><td>12/39</td><td>18/59</td><td>20/66</td><td>22/72</td><td>26/85</td></tr></table>					Zoom-head position	14mm	24mm	28mm	35mm	50mm	Guide number	12/39	18/59	20/66	22/72	26/85												
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Guide number	12/39	18/59	20/66	22/72	26/85																								
Angle of coverage	Variable in four steps, plus one-step with wide-flash adapter. <table><tr><th>Zoom-head position</th><th>Angle of coverage</th><th>Vertical</th><th>Horizontal</th></tr><tr><td>14mm (with wide-flash adapter)</td><td>14mm</td><td>87°</td><td>106°</td></tr><tr><td>24mm</td><td>24mm</td><td>60°</td><td>78°</td></tr><tr><td>28mm</td><td>28mm</td><td>53°</td><td>70°</td></tr><tr><td>35mm</td><td>35mm</td><td>45°</td><td>60°</td></tr><tr><td>50mm</td><td>50mm</td><td>34°</td><td>46°</td></tr></table>					Zoom-head position	Angle of coverage	Vertical	Horizontal	14mm (with wide-flash adapter)	14mm	87°	106°	24mm	24mm	60°	78°	28mm	28mm	53°	70°	35mm	35mm	45°	60°	50mm	50mm	34°	46°
Zoom-head position	Angle of coverage	Vertical	Horizontal																										
14mm (with wide-flash adapter)	14mm	87°	106°																										
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35mm	35mm	45°	60°																										
50mm	50mm	34°	46°																										
Flash duration	Approximately 1/1800 sec. at manual full output.																												
Bounce capacity	Flash head tilts up to 90° or down to -18° with click stops at 90°, 75°, 50°, 0° and -18°.																												
Power switch	ON/OFF button is provided; pressing the ON/OFF button for approx. 0.3 sec. turns the SB-50DX on or off. • When the SB-50DX is not used for approx. 40 sec., the standby function activates and the SB-50DX automatically turns off to conserve battery power.																												
Flash exposure control/type of TTL/D-TTL auto flash	Pressing the MODE button changes flash mode/type of TTL/D-TTL auto flash. <table><tr><td></td><td rowspan="3">TTL auto flash</td><td>Automatic Balanced Fill-Flash with TTL Multi-Sensor</td></tr><tr><td></td><td>Matrix Balanced/Center-Weighted/Spot Fill-Flash</td></tr><tr><td></td><td>Standard TTL Flash</td></tr><tr><td>D </td><td rowspan="3">D-TTL auto flash</td><td>Automatic Balanced Fill-Flash with TTL Multi-Sensor for Digital SLR</td></tr><tr><td>D </td><td>Center-Weighted Fill-Flash for Digital SL</td></tr><tr><td>D </td><td>Standard TTL Flash for Digital SLR</td></tr><tr><td></td><td colspan="2">Manual flash</td></tr></table>						TTL auto flash	Automatic Balanced Fill-Flash with TTL Multi-Sensor		Matrix Balanced/Center-Weighted/Spot Fill-Flash		Standard TTL Flash	D 	D-TTL auto flash	Automatic Balanced Fill-Flash with TTL Multi-Sensor for Digital SLR	D 	Center-Weighted Fill-Flash for Digital SL	D 	Standard TTL Flash for Digital SLR		Manual flash								
	TTL auto flash	Automatic Balanced Fill-Flash with TTL Multi-Sensor																											
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	Manual flash																												
Power source	Two CR123A or DL123A type 3V lithium batteries.																												

Recycling time and number of flashes (Manual flash mode)	Minimum recycling type: approx. 3.5 sec. with fresh batteries. Number of flashes and recycling time: 260 times or more with 3.5 to 30 sec. recycling time. (With AF-Assist Illuminator, Power Zoom function and LCD panel illuminator not activated.)						
AF-Assist Illuminator	Automatically fires LED beam toward subject when performing autofocus in dim light or in the dark with Nikon AF cameras.						
Ready-light	Lights up when SB-50DX is charged and ready to fire. Blinks when flash fires at its maximum output, indicating light may have been insufficient (in TTL/D-TTL auto flash mode).						
FLASH button	Pressing FLASH button performs test firing. Pressing the button turns the SB-50DX on again after the unit has been automatically turned off by the standby function.						
Wide-flash adapter	Allows the SB-50DX to be used with 14mm lenses.						
Diffuser	Attach diffuser to the camera's built-in Speedlight for double-flash (bounce) operation.						
Sound monitor	The SB-50DX emits a single beep when it is charged and ready-to fire in wireless multiple flash operation. The SB-50DX emits two beeps when it has fired properly in wireless multiple flash operation. The SB-50DX emits beeps for 3 sec. after it has fired at maximum output or improperly fired in TTL wireless multiple flash operation in the Auto Slave Flash mode.						
Light sensor	Senses light received from the master flash unit in wireless multiple flash operation. <table border="1" data-bbox="715 1247 1271 1357"> <tr> <th>Wireless Flash mode</th><th>Effective range</th></tr> <tr> <td>Auto Slave Flash</td><td>Approx. 7m (23 ft.)</td></tr> <tr> <td>Manual Slave Flash</td><td>Approx. 40m (131 ft.)</td></tr> </table>	Wireless Flash mode	Effective range	Auto Slave Flash	Approx. 7m (23 ft.)	Manual Slave Flash	Approx. 40m (131 ft.)
Wireless Flash mode	Effective range						
Auto Slave Flash	Approx. 7m (23 ft.)						
Manual Slave Flash	Approx. 40m (131 ft.)						
Infrared Filter SW-9IR	Enables you to use the SB-50DX as an infrared remote commander.						
Lock lever	Prevents the SB-50DX from accidentally slipping off the camera.						
LCD panel illuminator	Turned on and off every time the SLAVE button is pressed; automatically turns off after approx. 16 sec. when the SB-50DX is not in use.						
Backside indications	Light-condensing paint is applied to the characters and symbols.						
Dimensions (W x H x D)	Approx. 63 x 107 x 105 mm (2.5 x 4.2 x 4.1 in.)						
Weight (without batteries)	Approx. 235g (8.3 oz.)						
Accessories supplied	Soft Case SS-50, Infrared Filter SW-9IR						

Features

1. Small size and light weight clip-on type using IGBT.
2. SB-50DX can be attached to a single-lens reflex camera with a built-in strobe flash when the strobe flash is popped up. In this case the shooting with two flashes (built-in strobe flash and flashgun for this product) is available.
3. Wireless light adjustment function where wireless TTL light adjustment is available.
4. Power stand-by function (Auto-OFF) linking to the camera half push OFF (However, in the case of the wireless slave mode, it is turned to auto-OFF mode one hour later).
5. Light reduction plate, which reduces the light of strobe flash on the single-lens reflex camera with a built-in strobe flash.
6. An IR filter which cuts the visual light by covering entire lighting section: it can be attached at the front of the lighting section.
7. A wide panel which covers the 14 mm lens visual field, can be attached under the lighting section of this product.
8. Close shot lighting is available by turning the lighting section lower to an angle of 18° and arranging wide panel at the front of the lighting section.
9. Liquid-crystal indication and liquid-crystal back light are available.
10. The automatic setting for the inner zoom head (reflector movement system) is available to 24 - 50 mm flash angles by data communication.
11. Upper and lower bounce system (Upper 90°, Lower 18°)
12. TTL exposure correction setting and zoom head (flash angle) automatic setting are available on the liquid-crystal indication panel by combination with a data communicable camera.
13. One-touch system hot shoe drop prevention mechanism without using any lock nut.
14. Light storage type coating is used on the rear indications for enhancing switch operability in the dark.

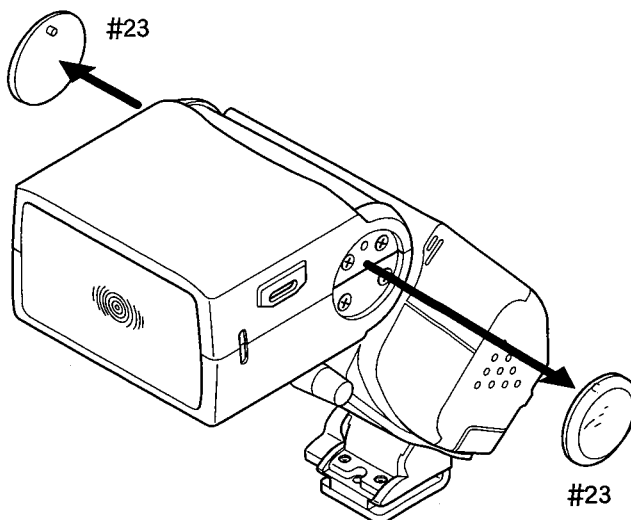
DISASSEMBLING

 WARNING	
	● There are high voltage parts inside. Be careful of this electric shock, when you remove the cover. ● You must discharge the main condenser according to the instruction of this repair manual before you remove the cover.

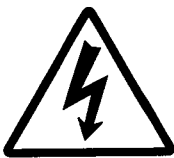
Note

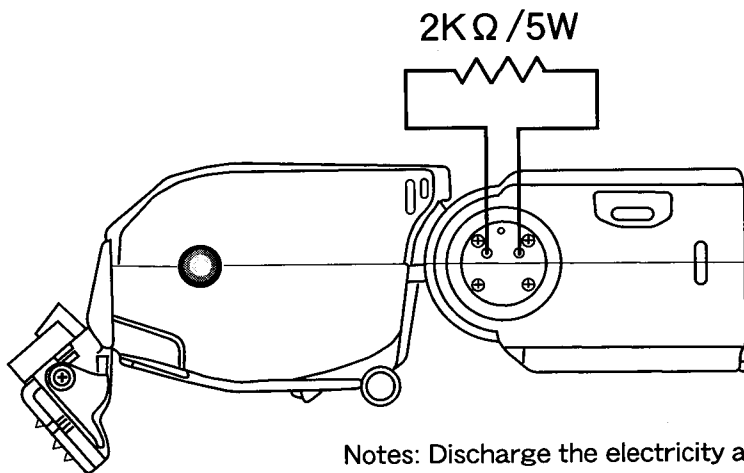
1. Remove the batteries before beginning disassembly.
2. When disassembling the camera, be certain to remember how wires are attached, which types of screws go where, etc.
3. When replacing the lead wires, be sure to use the lead wires designated in Parts List.

1. Side Rubber



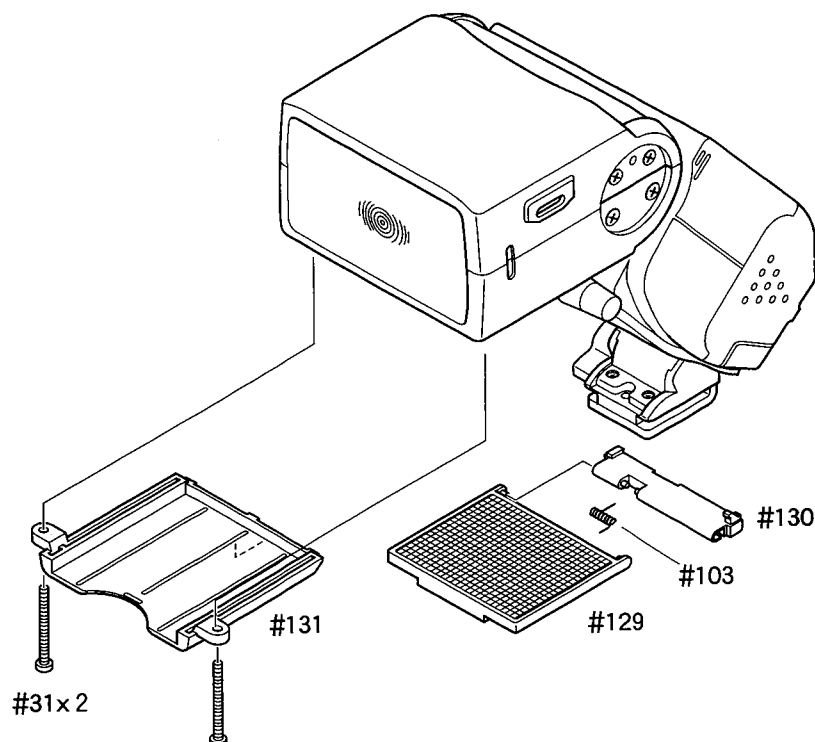
2. Discharging the electricity in the main capacitor

 WARNING	
	● There are high voltage parts inside. Be careful of this electric shock, when you remove the cover. ● You must discharge the main condenser according to the instruction of this repair manual before you remove the cover.



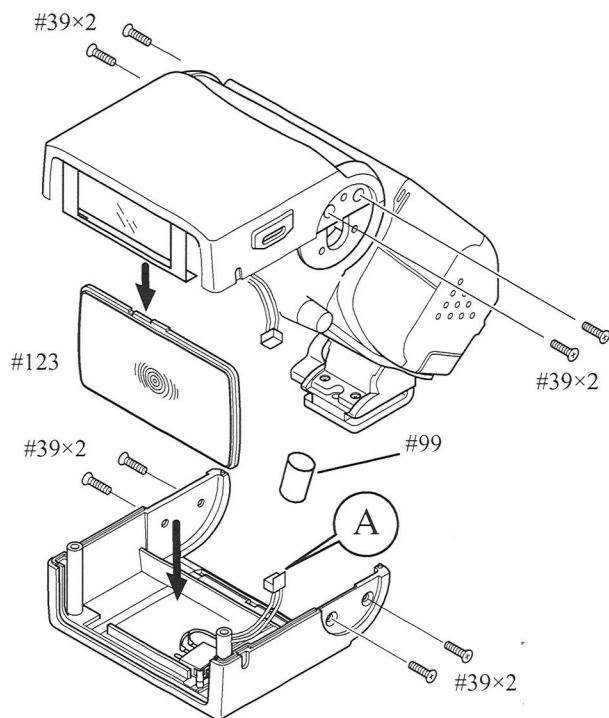
Notes: Discharge the electricity at the position where the flash head is as shown in Figure.

3. Wide Panel



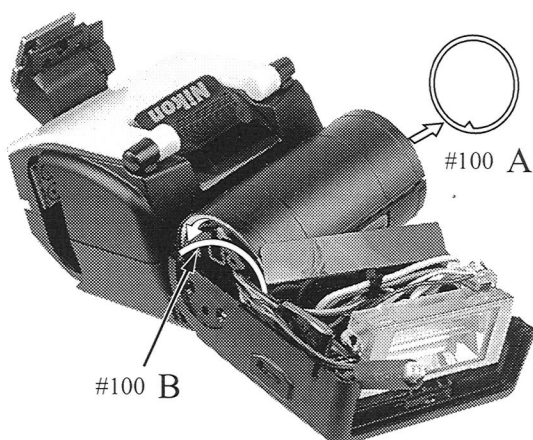
※ Products of which serial number is 2013900 or 3001591 and after

4a. L Case

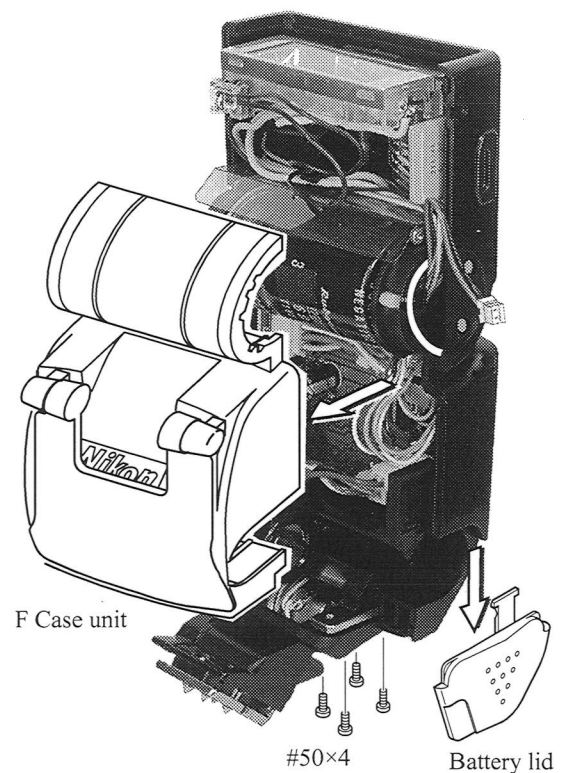


- Remove the 8 pieces of the screws (#39).
- Remove the L case (#L).
- Remove the fresnel lens (#123).
- Disconnect the connector A.
- Remove the tube (#99).

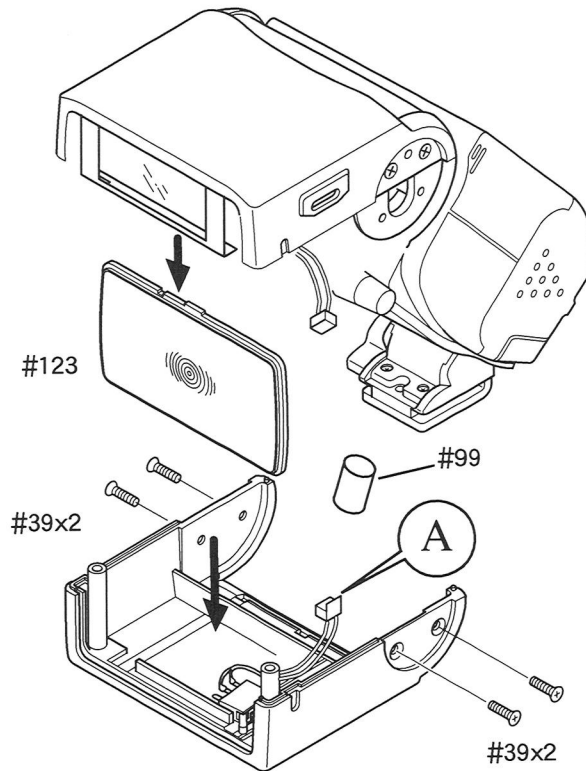
5a. F Case



- Set the flash unit in the position shown in Figure above.
- Remove the retaining ring A (#100).
- Remove the retaining ring B (#100).
- Remove the 4 pieces of the screws (#50).
- Remove the F case.
- The battery lid can be removed.

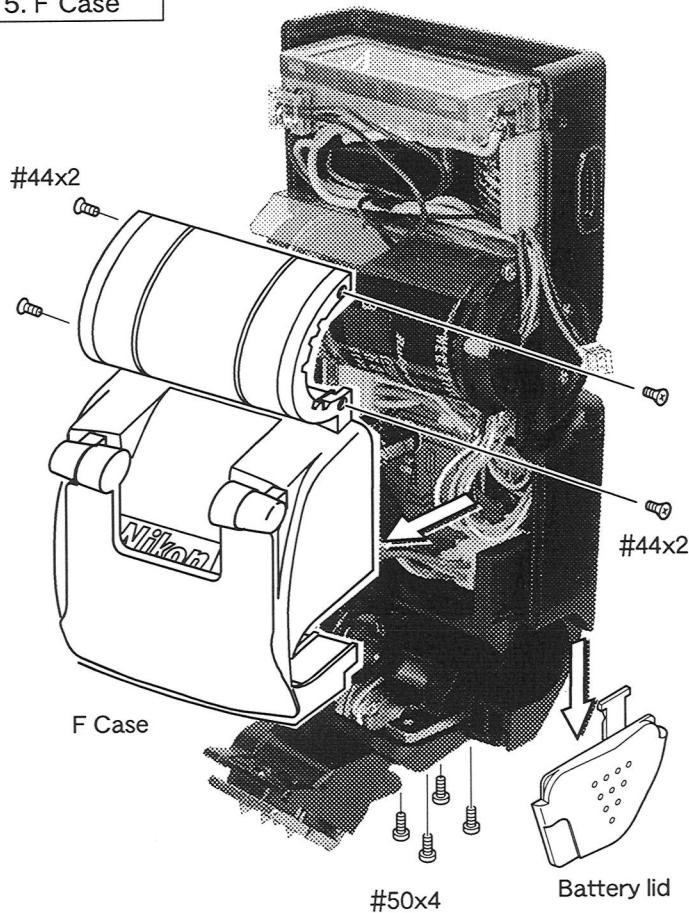


4. L Case

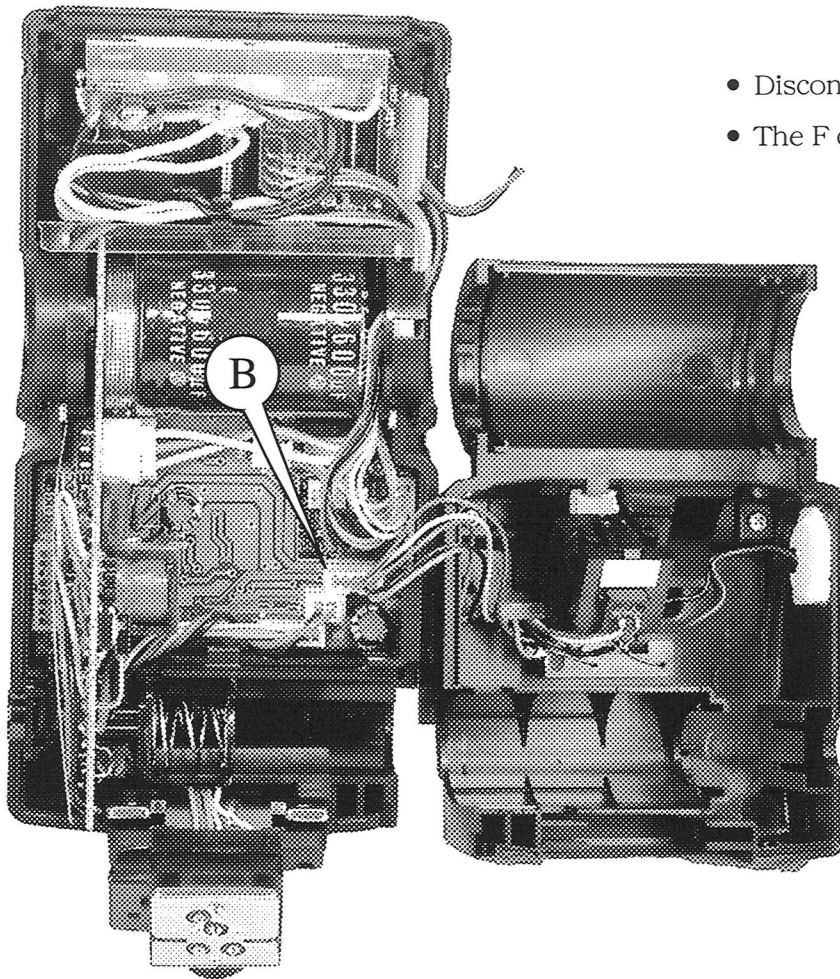


- Remove the 4 pieces of the screws (#39).
- Remove the L case (#L).
- Remove the fresnel lens (#123).
- Disconnect the connector A.
- Remove the tube (#99).

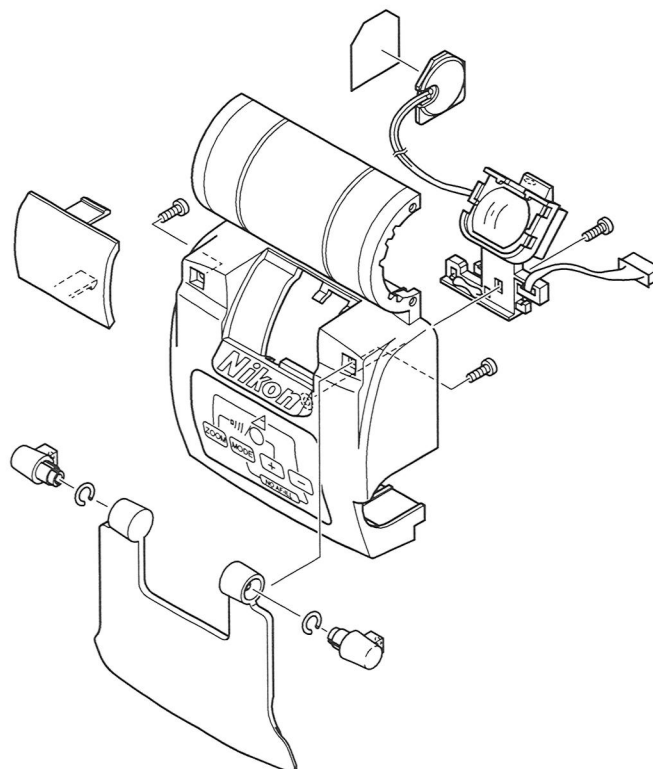
5. F Case



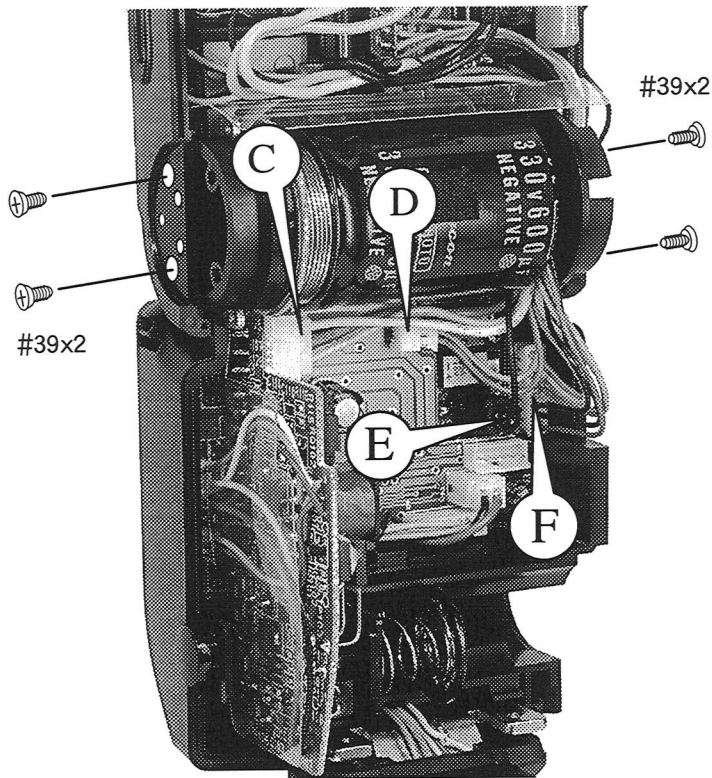
- Remove the 4 pieces of the screws (#50).
- Remove the 4 pieces of the screws (#44).
- Remove the F case.
- The battery lid can be removed.



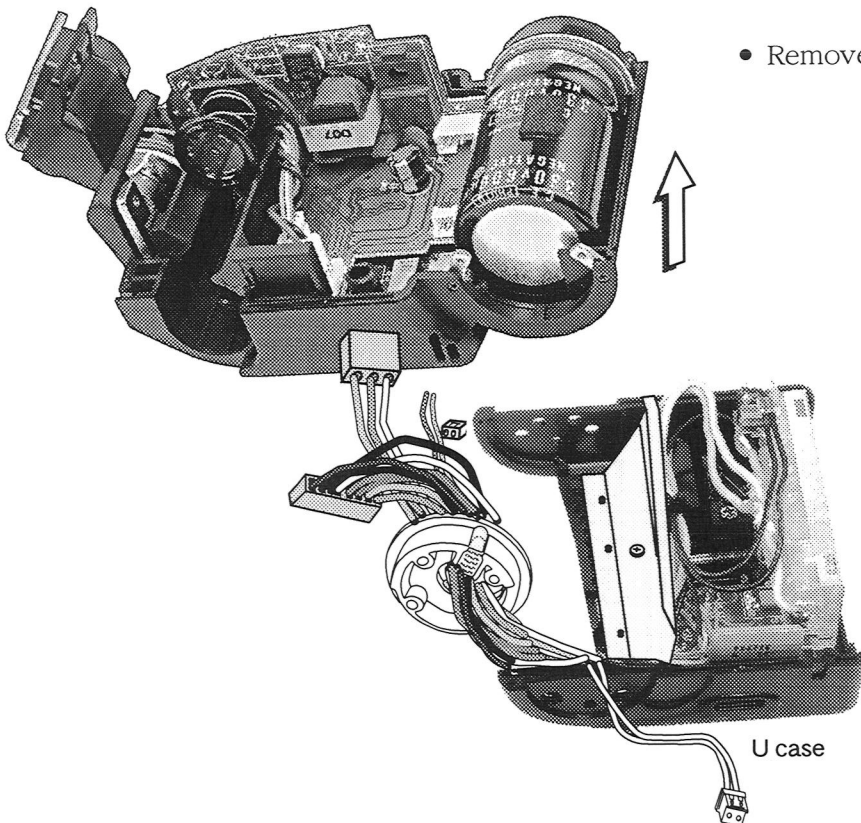
- Disconnect the connector B.
- The F case unit can be removed.



6. U case



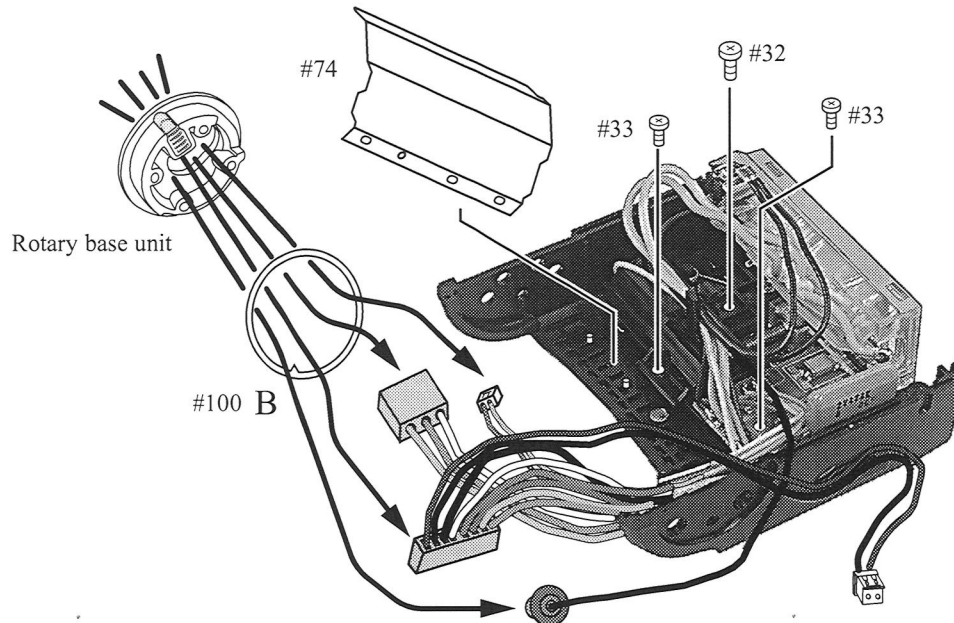
- Disconnect the connector C.
- Disconnect the connector D.
- Disconnect the connector E.
- Disconnect the connector F.
- Remove the 4 pieces of the screws (#39).



- Remove the U case.

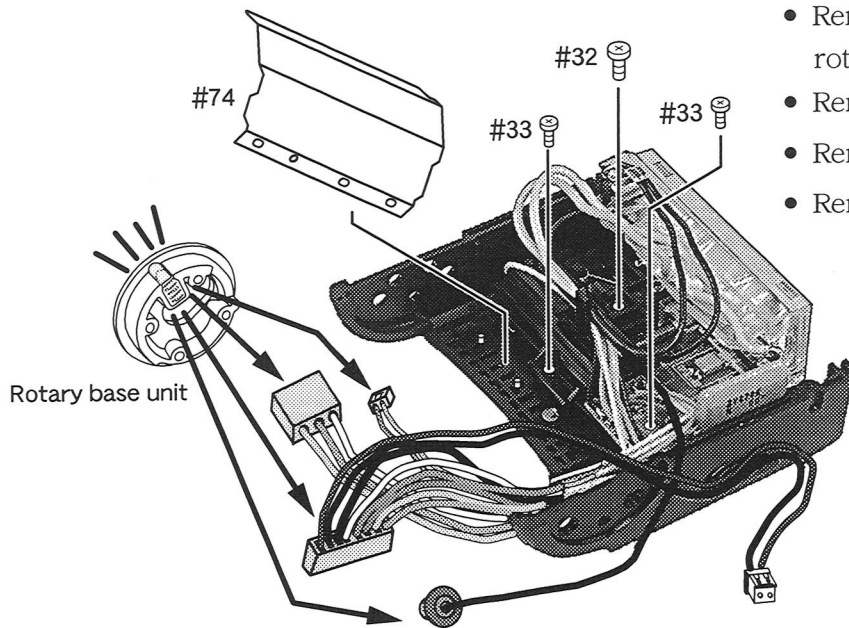
※ Products of which serial number is 2013900 or 3001591 and after

7a. Flash unit

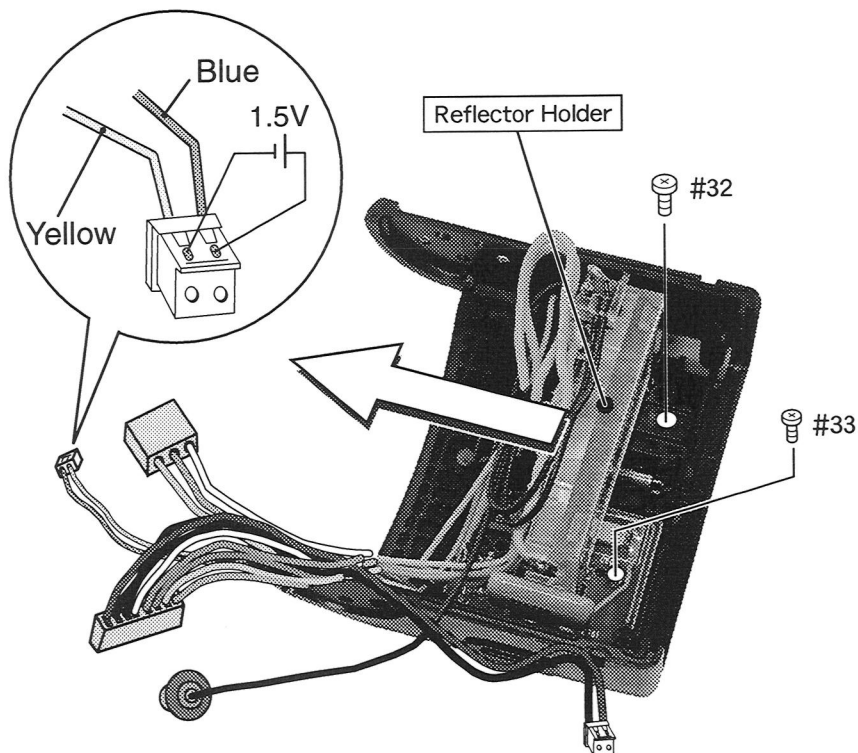


- Remove every lead wires from the rotary base unit.
- Remove the retaining ring B (#100).
- Remove the sheet (#74).
- Remove the 2 pieces of the screws (#33).
- Remove the 1 piece of the screw (#32).

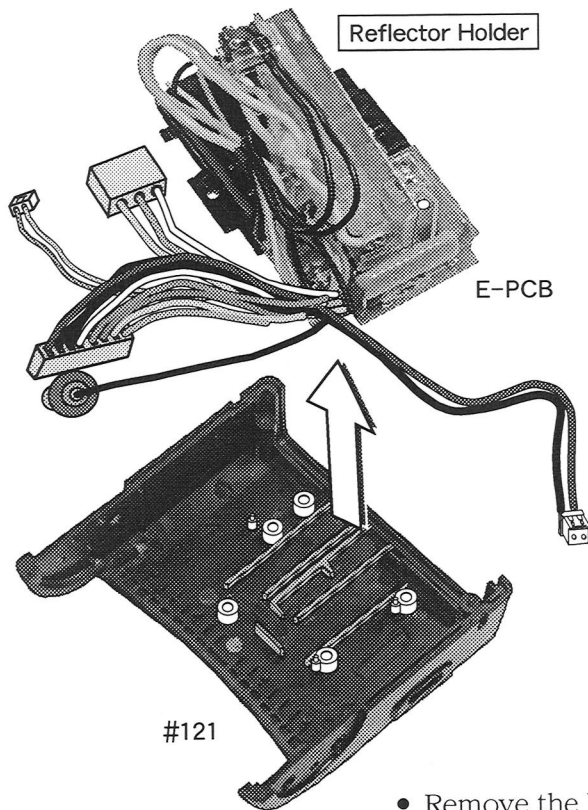
7. Flash unit



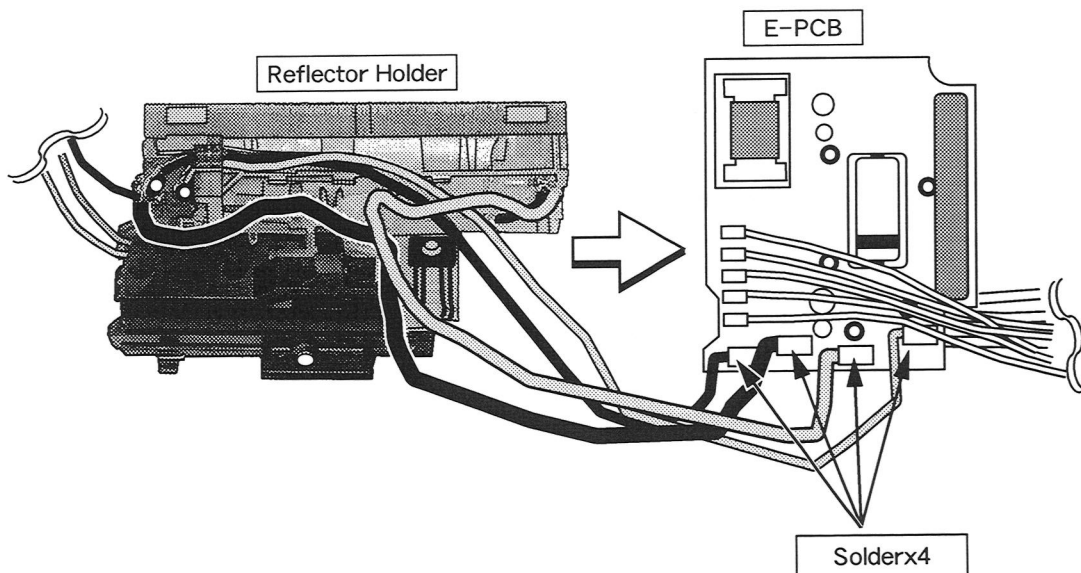
- Remove every lead wires from the rotary base unit.
- Remove the sheet (#74).
- Remove the 2 pieces of the screws (#33).
- Remove the 1 piece of the screw (#32).



- Make the motor run by a battery as shown in Figure above to move the reflector holder in an arrow direction.
- Remove the 1 piece of the screw (#33)
- Remove the 1 piece of the screw (#32)

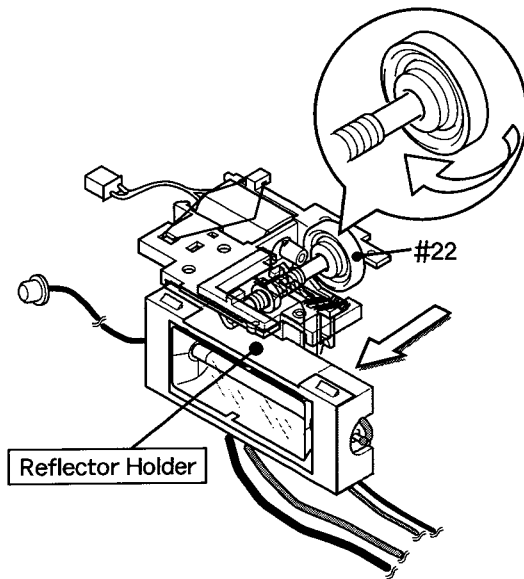


- Remove the E-PCB and reflector holder from the U case (#121).

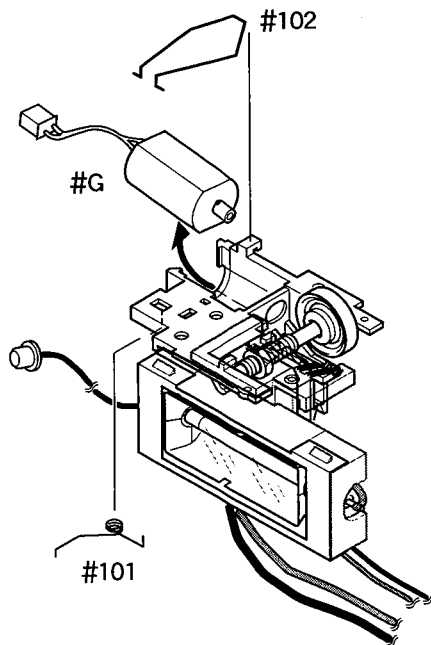


- Slide the E-PCB in an arrow direction to remove it from the reflector holder.
- Unsolder 4 locations of the solder.

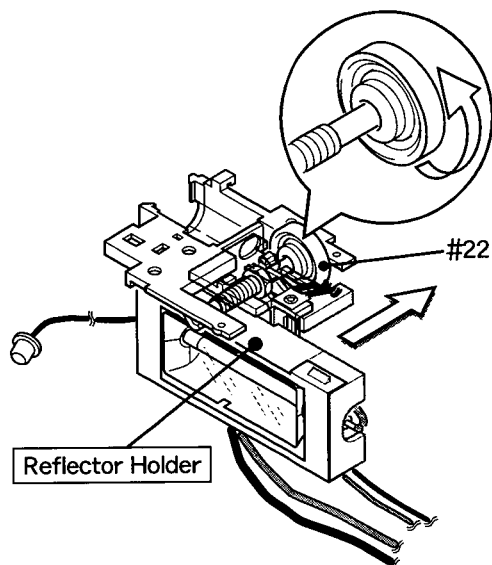
Notes: Do not bend the brush when removing.



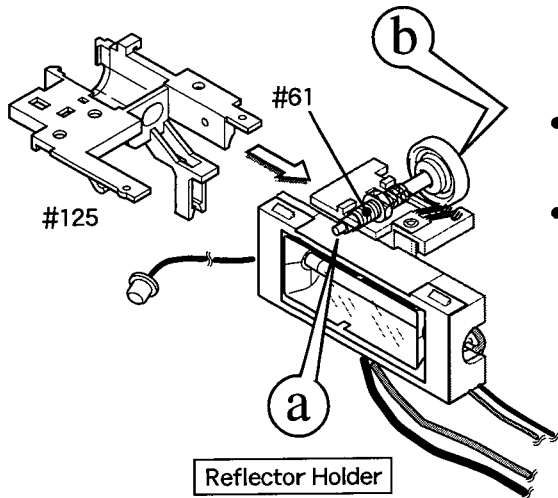
- Rotate the shaft roller (#22) clockwise and move the reflector holder in an arrow direction.



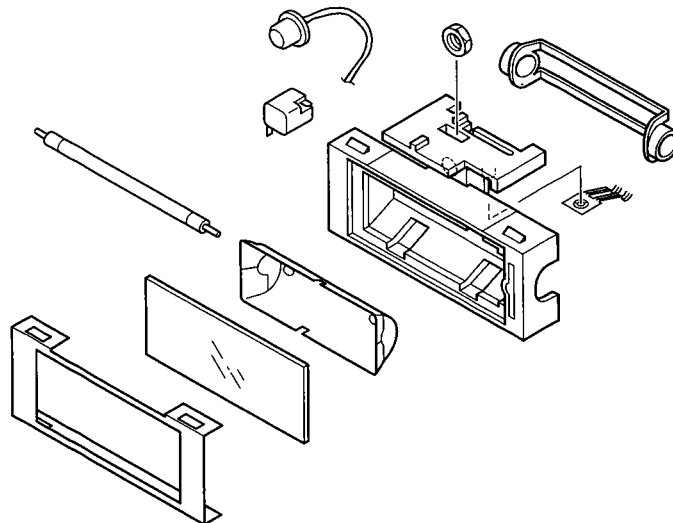
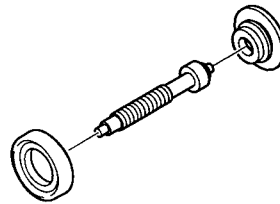
- Remove the springs (#101) and (#102).
- Remove the motor unit (#G).



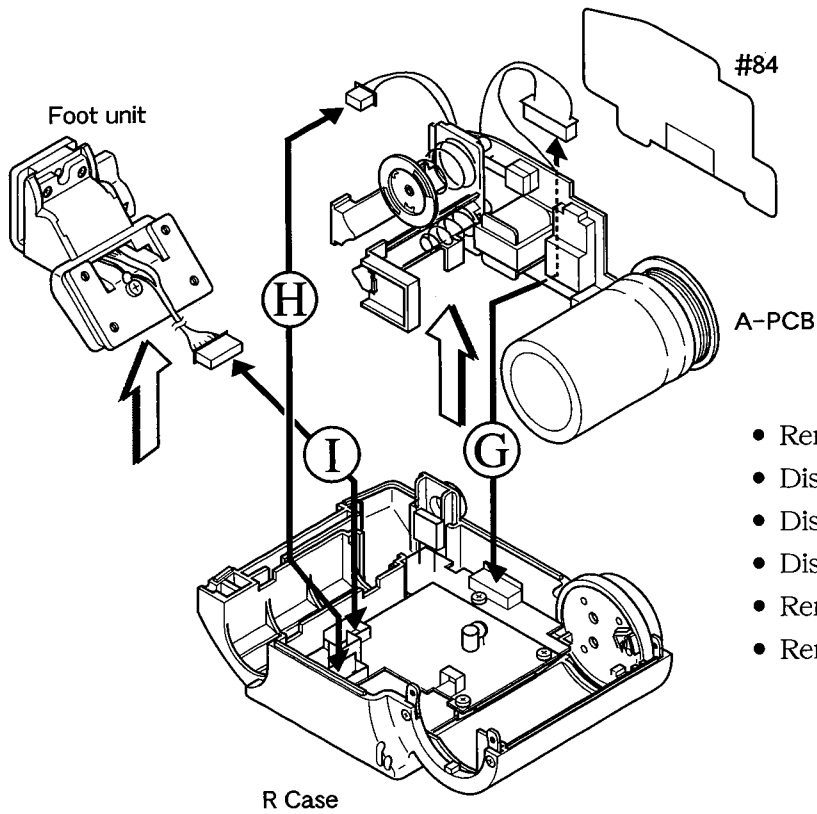
- Rotate the shaft roller (#22) counterclockwise and move the reflector holder in an arrow direction.



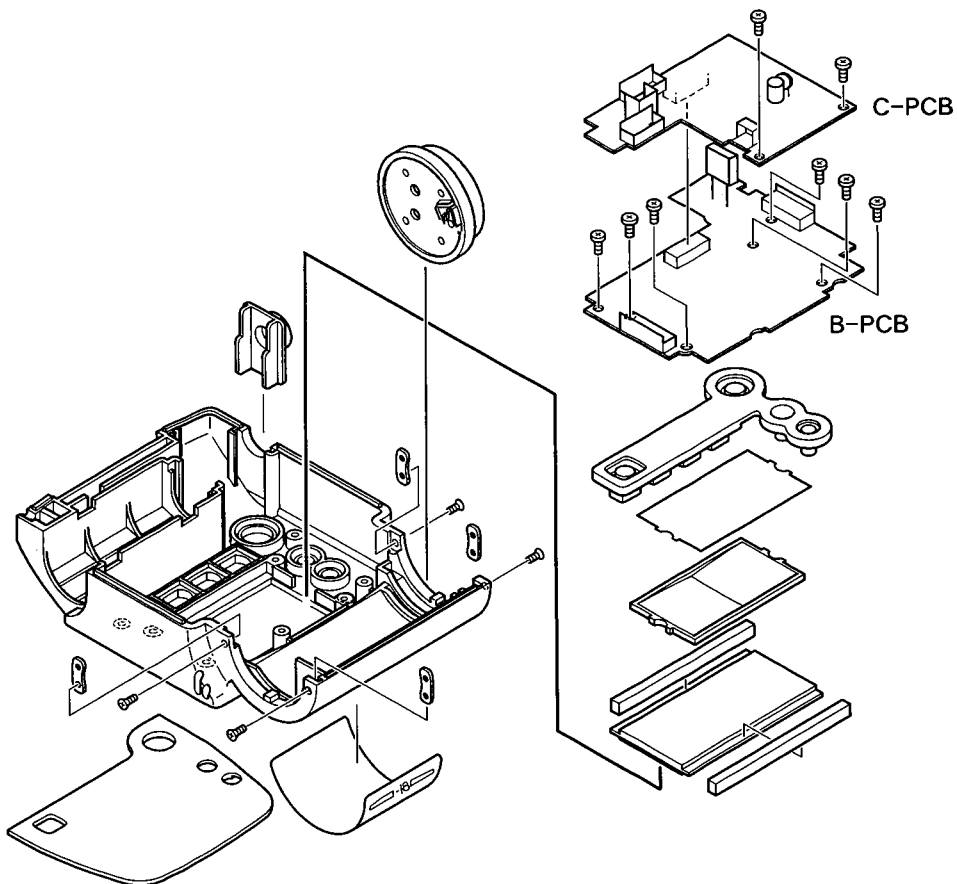
- Remove the zoom shaft (#61) from the motor base plate (#125) in order of [a], [b].
- The reflector holder can be removed from the motor base plate (#125).



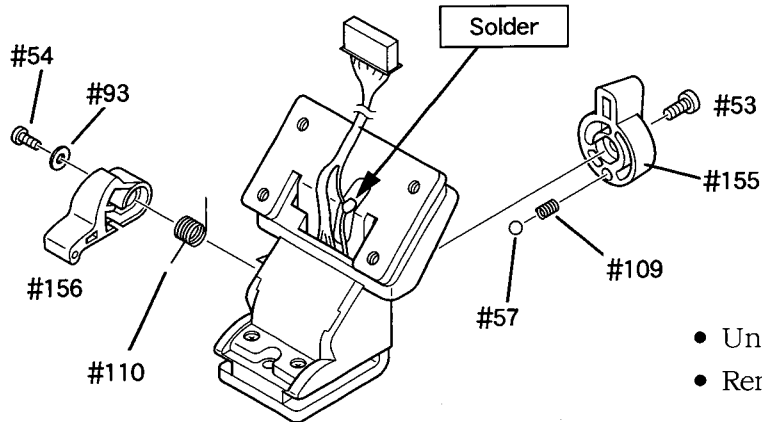
8. R Case



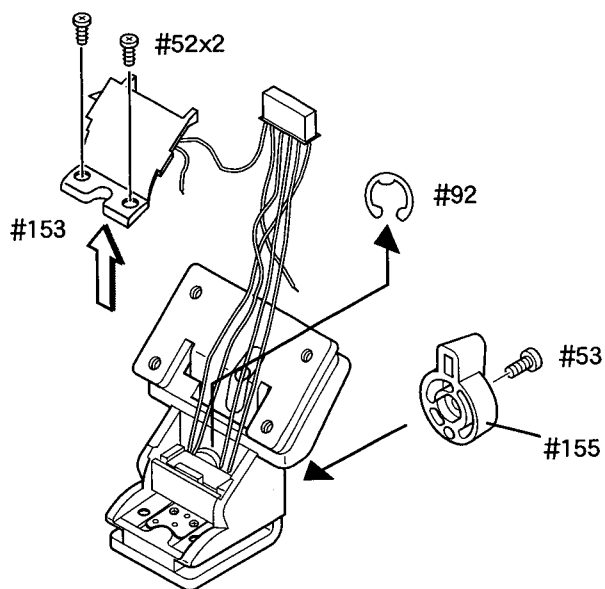
- Remove the insulate sheet (#84).
- Disconnect the connector G.
- Disconnect the connector H.
- Disconnect the connector I.
- Remove the A-PCB.
- Remove the foot unit.



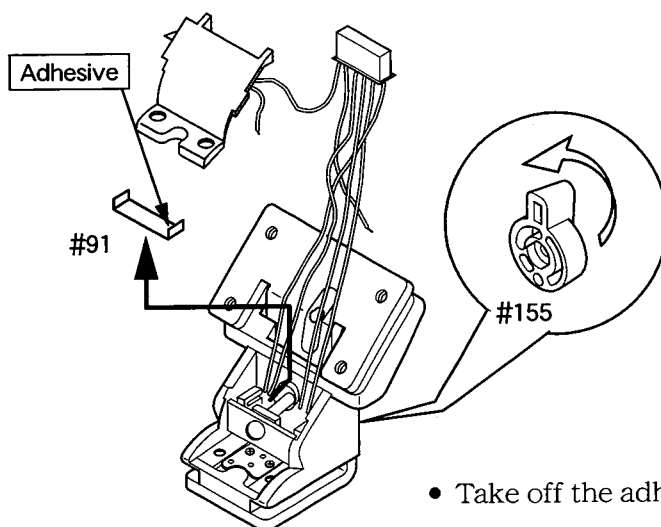
9 Foot Unit



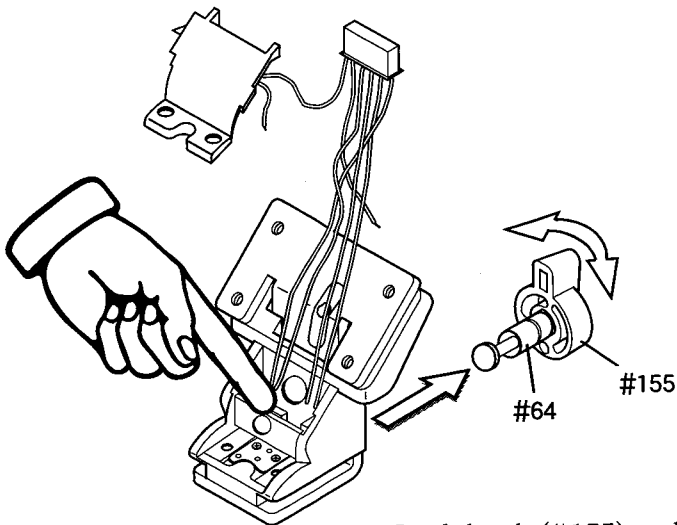
- Unsolder the solder.
- Remove the parts indicated in Figure.



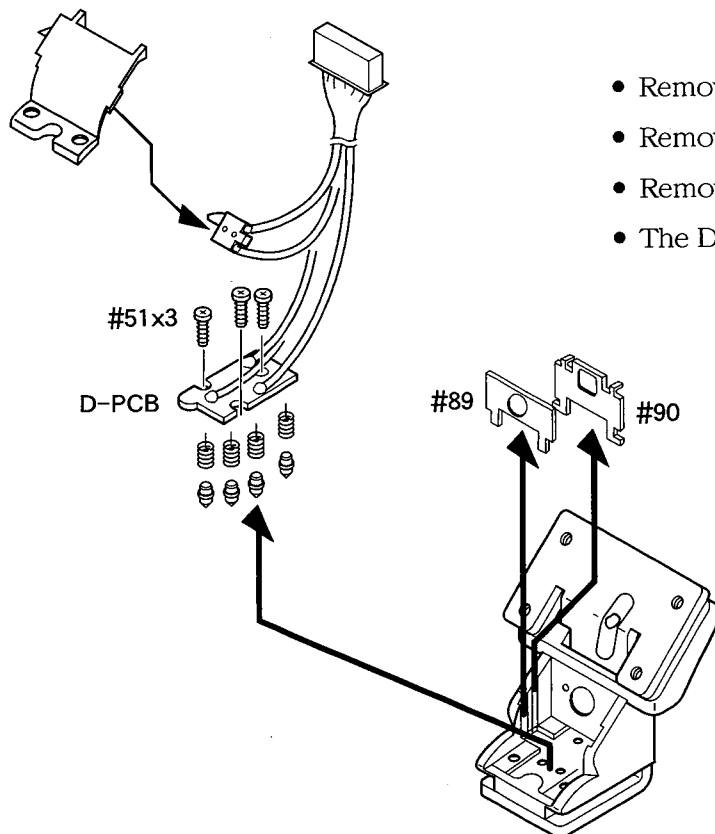
- Mount the lock knob (#155) to the foot unit by the screw (#53).
- Remove the 2 pieces of screws (#52).
- Remove the foot cover (#153).
- Remove the E ring (#92).



- Take off the adhesive on the shoe lock spring. (#91).
- Rotate the lock knob (#155) to [LOCK] side and remove the shoe lock spring (#91).



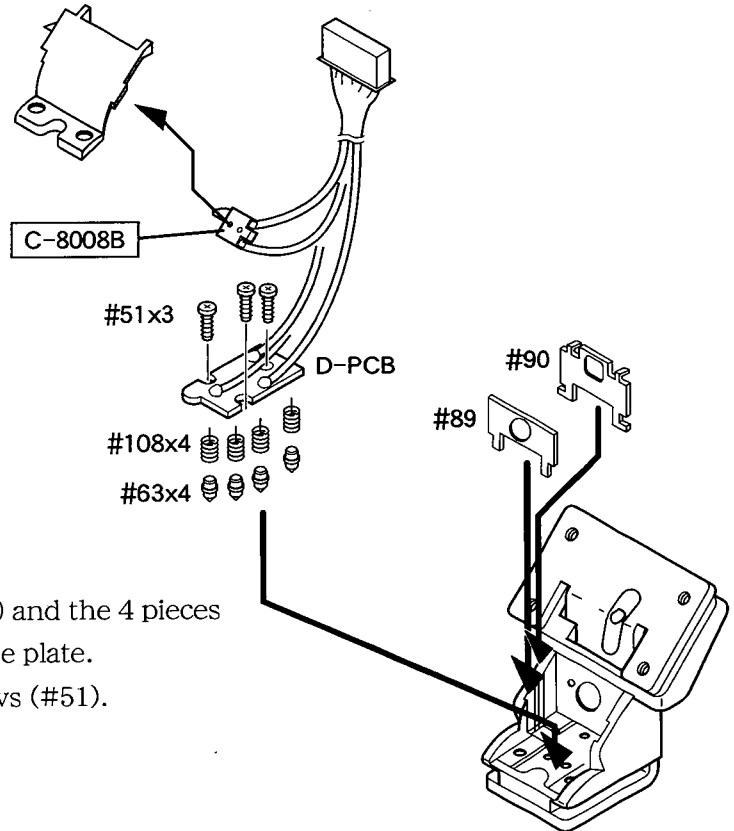
- Lock knob (#155) and the shaft (#64) can be removed by rotating the rock knob (#155) to right and left while pushing the pointed part in Figure.



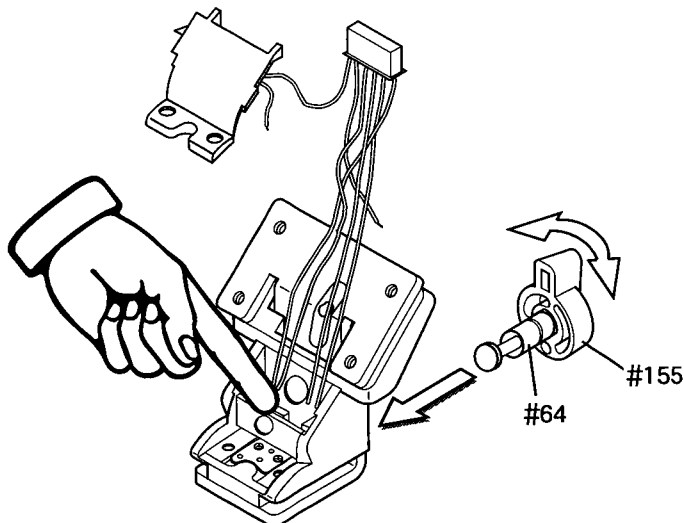
- Remove the shoe lock support plate (#89).
- Remove the shoe rock plate (#90)
- Remove the 3 pieces of screws (#51).
- The D-PCB can be removed.

ASSEMBLING

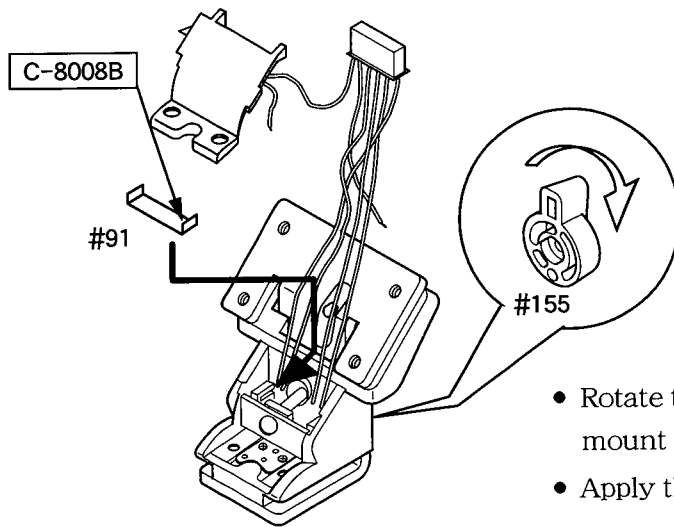
1. Foot Unit



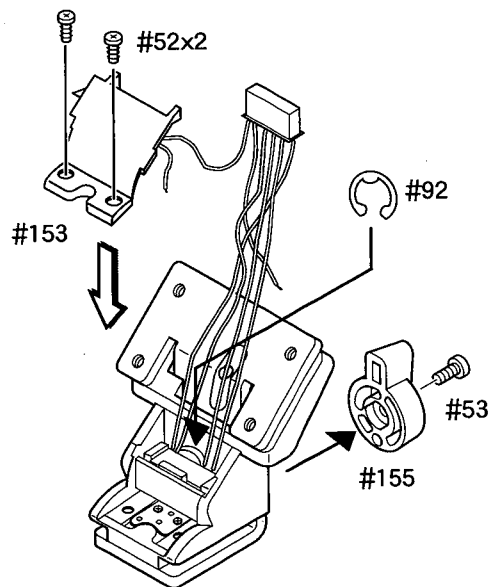
- Set the 4 pieces of the shoe contacts (#63) and the 4 pieces of the shoe springs (#108) to the shoe base plate.
- Mount the D-PCB by the 3 pieces of screws (#51).
- Mount the shoe lock support plate (#89).
- Mount the shoe lock plate (#90).



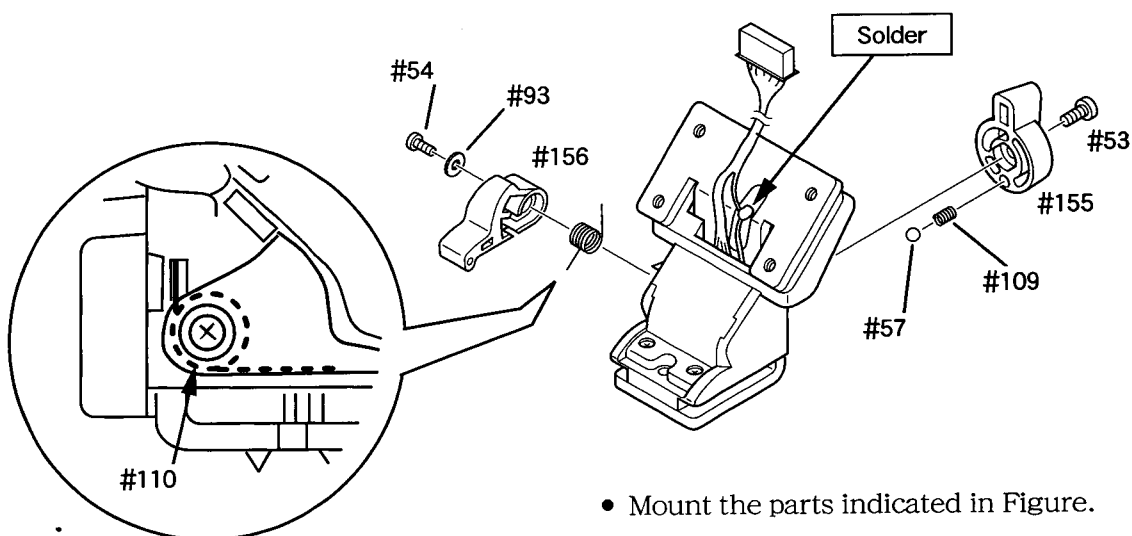
- Mount the lock knob (#155) and the shaft (#64) to the foot unit by rotating the lock knob (#155) to right and left while pressing the part shown in Figure.



- Rotate the lock knob (#155) in an arrow direction to mount the shoe lock spring (#91).
- Apply the adhesive on the shoe lock spring(#91).



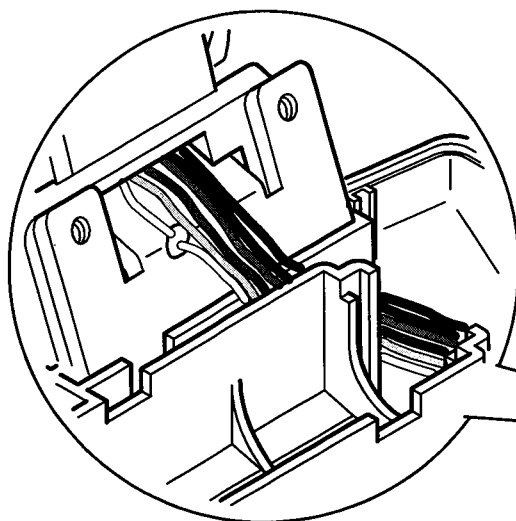
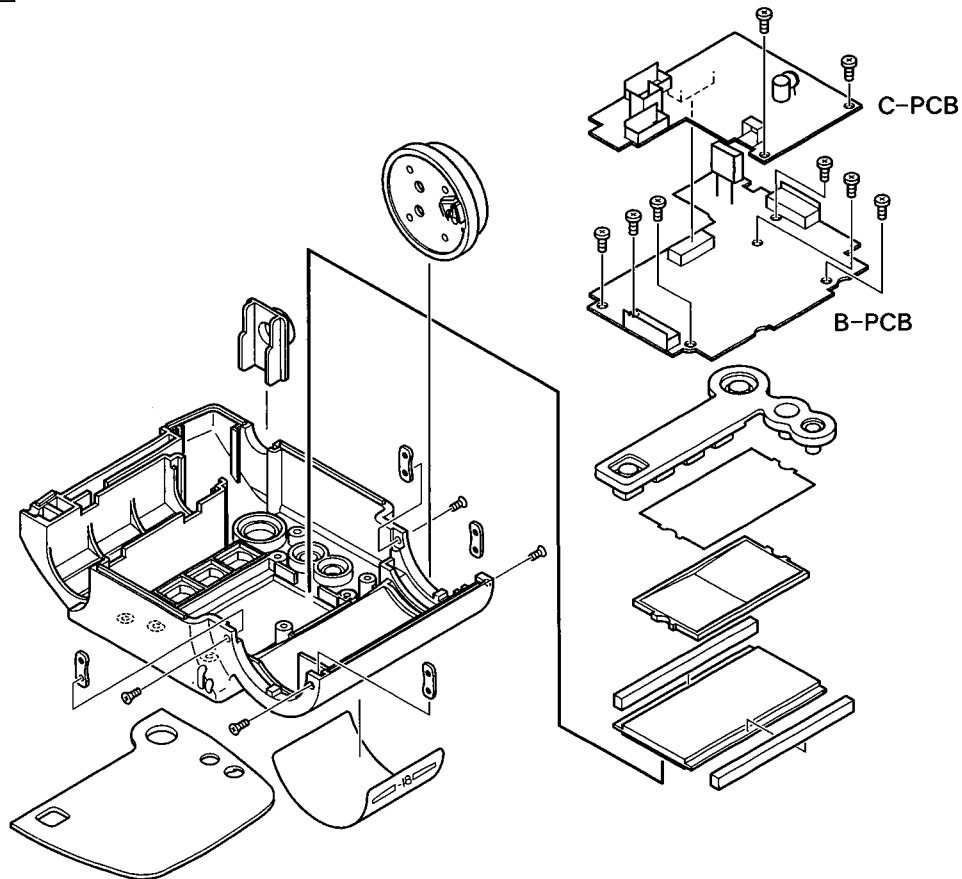
- Mount the E ring (#92).
- Mount the foot cover (#153).
- Attach the 2 pieces of the screws (#52).
- Remove the lock knob (#155) and the screw (#53).



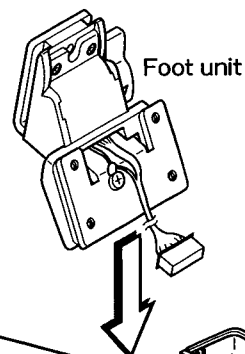
Where the spring (#110) to be mounted.

- Mount the parts indicated in Figure.
- Solder the 2 lead wires.

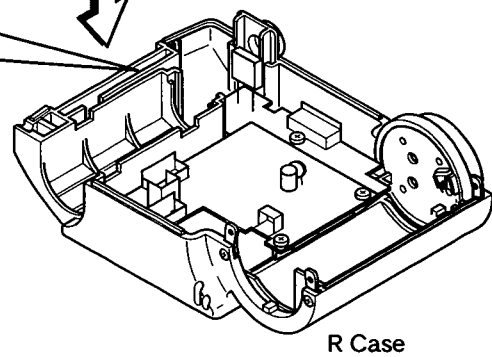
2. R Case

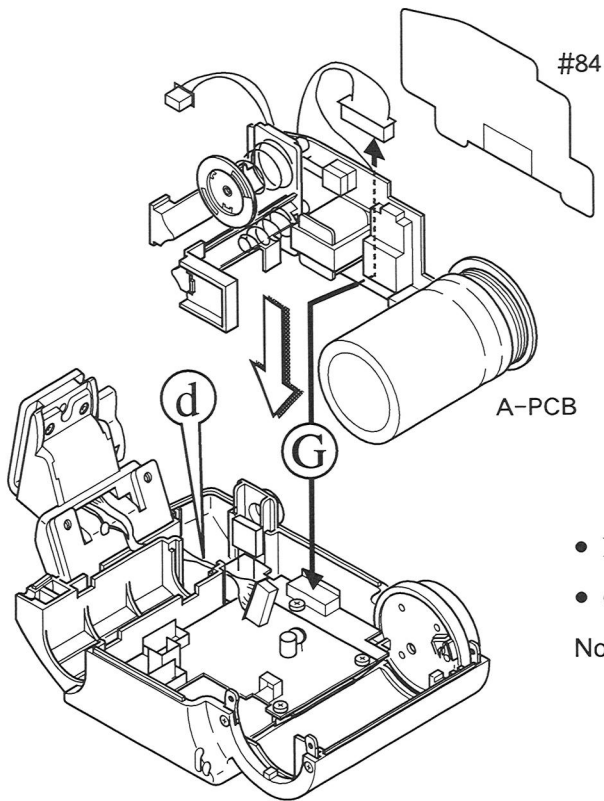


Arrangement of the lead wires



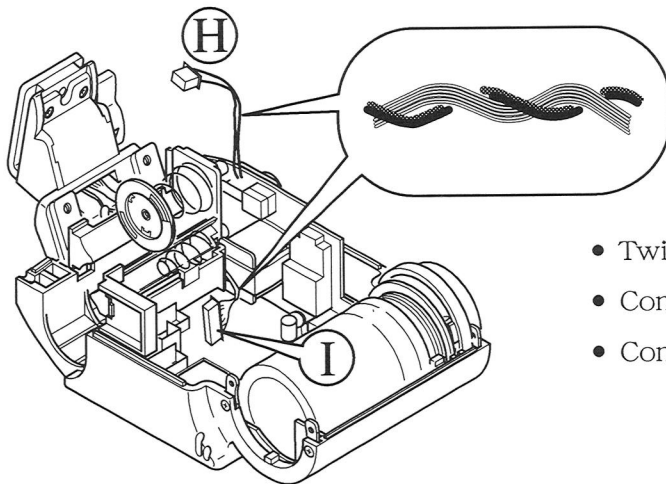
- Mount the foot unit.



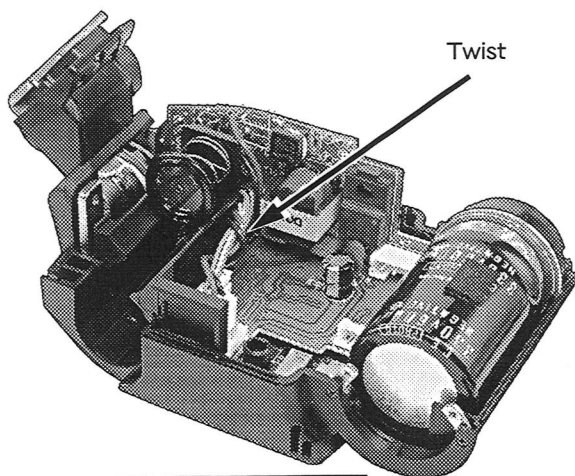


- Mount the A-PCB.
- Connect the connector G.

Notes: Do not pinch the lead wire in the part d .



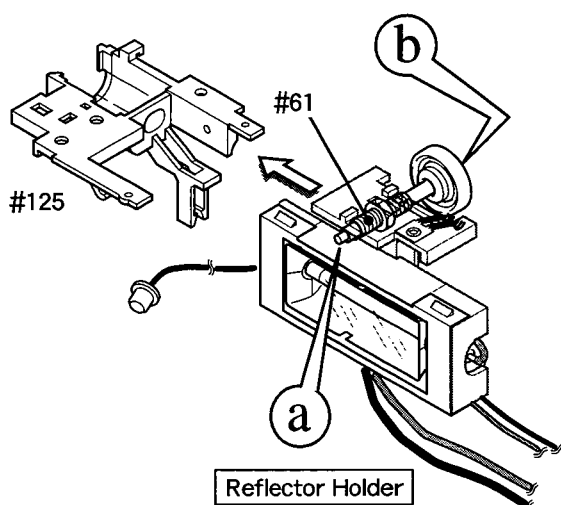
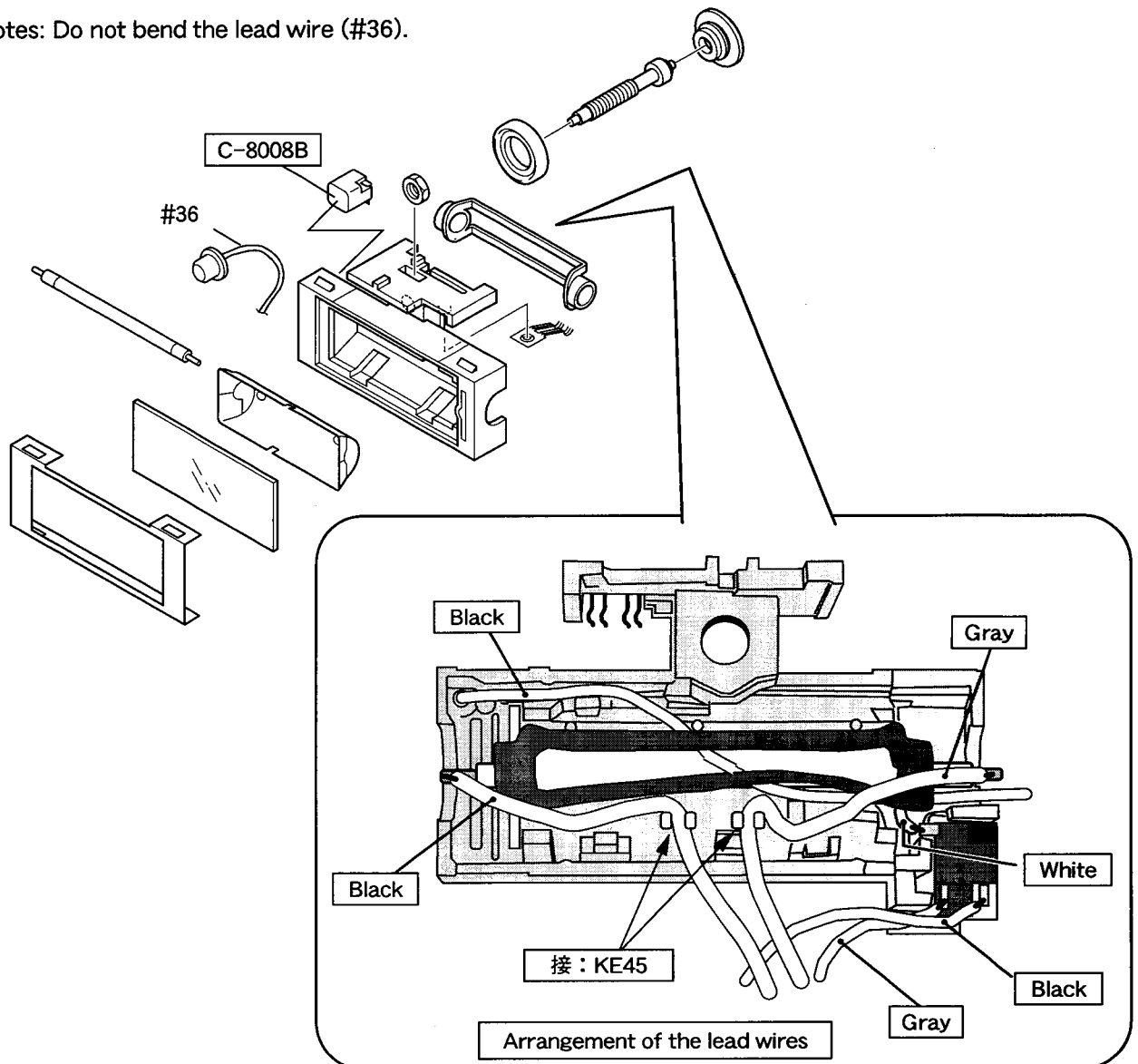
- Twist the lead wires of the connector H and I.
- Connect the connector I.
- Connect the connector H.



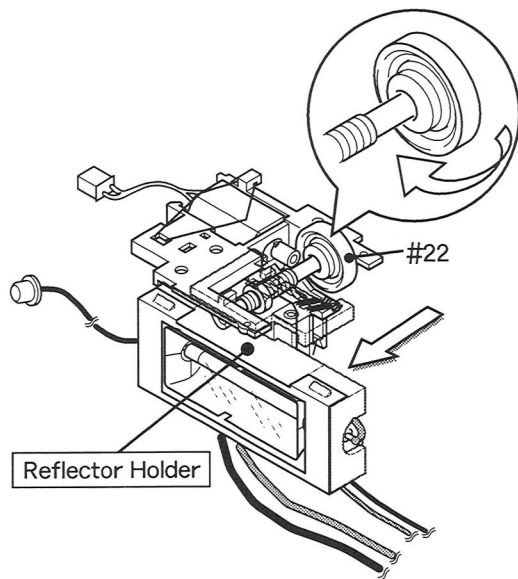
Arrangement of the lead wires

3.Flash unit

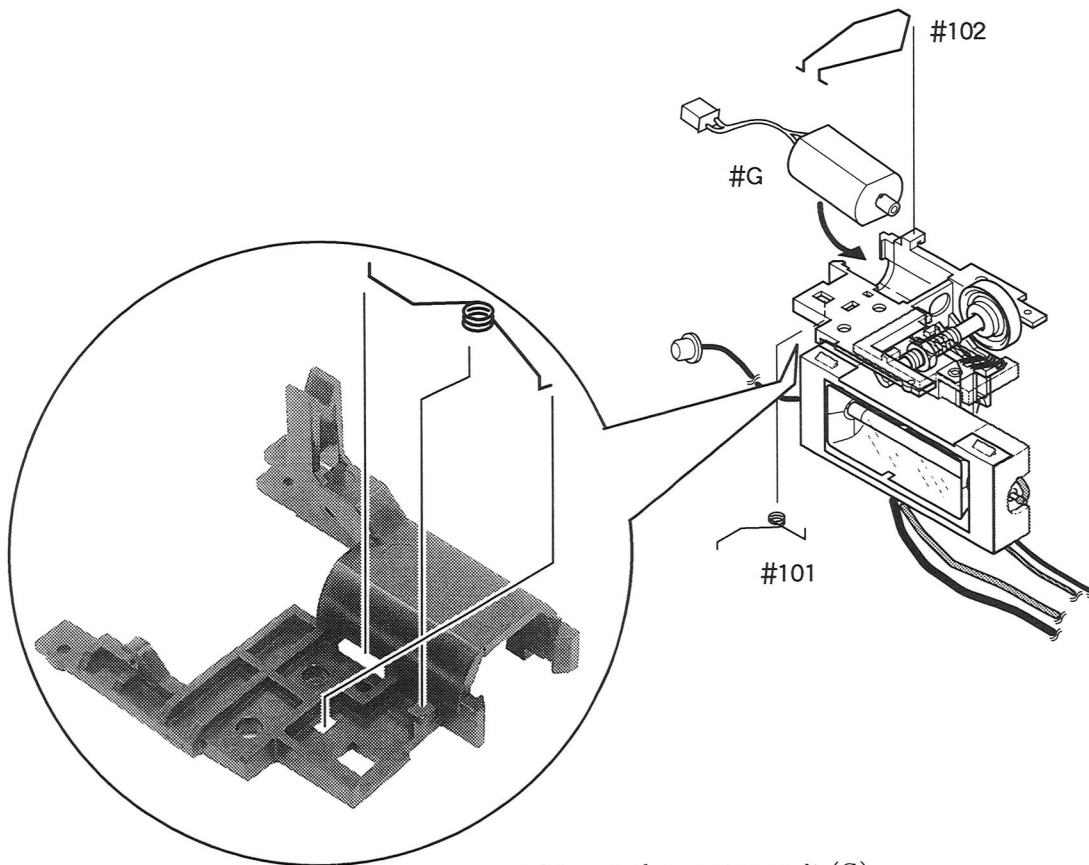
Notes: Do not bend the lead wire (#36).



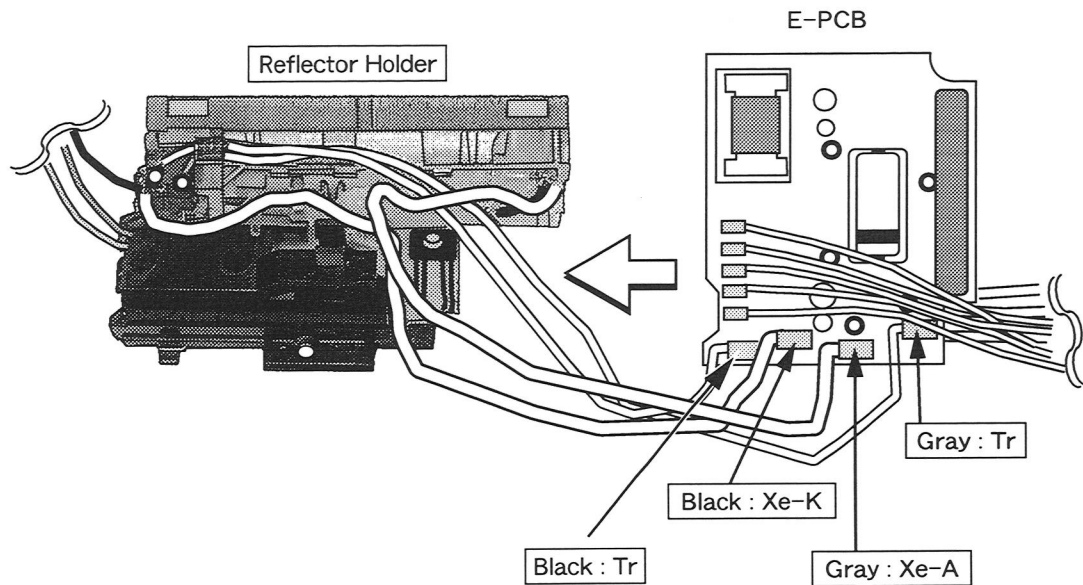
- Mount the zoom shaft (#61) to the motor base plate (#125) in order of [b], [a].



- Rotate the shaft roller (#22) clockwise and move the reflector holder in an arrow direction.

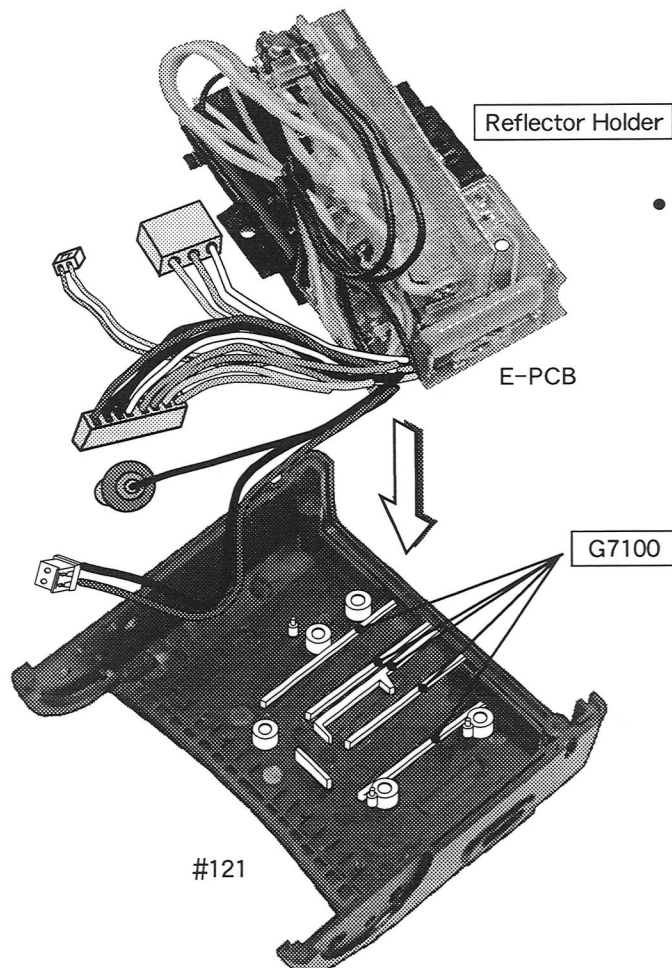


- Mount the motor unit (G).
- Mount the springs (#101) and (#102).



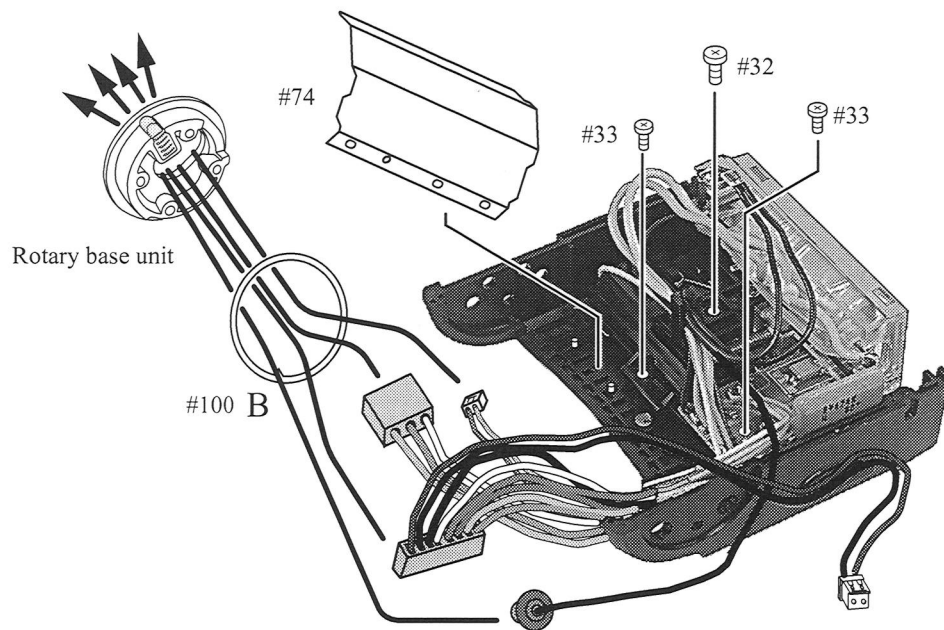
- Mount the E-PCB to the reflector holder.
- Solder 4 locations

Notes: Do not bend the brush when assembling.

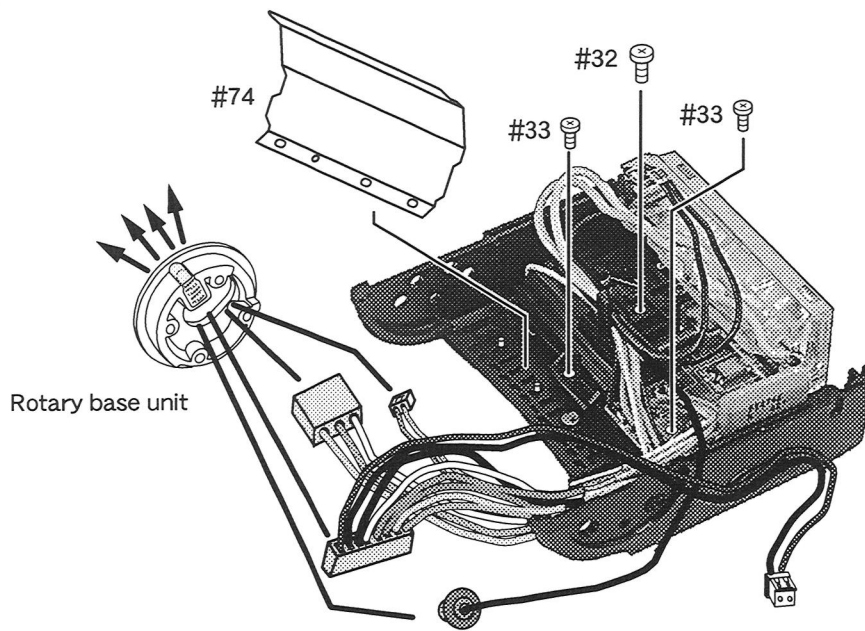


- Mount the E-PCB and the reflector holder to the U case (#121).

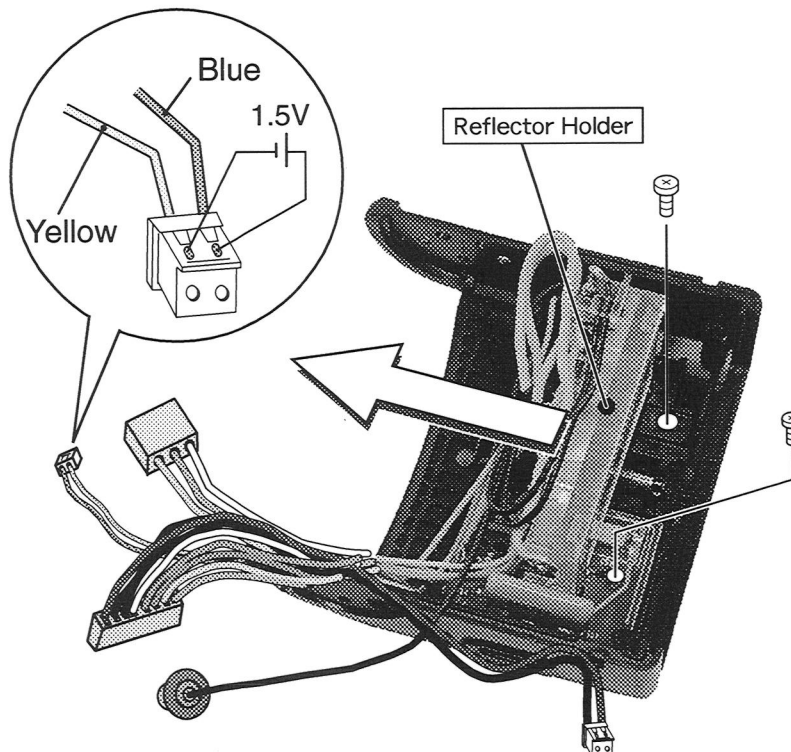
※ Products of which serial number is 2013900 or 3001591 and after



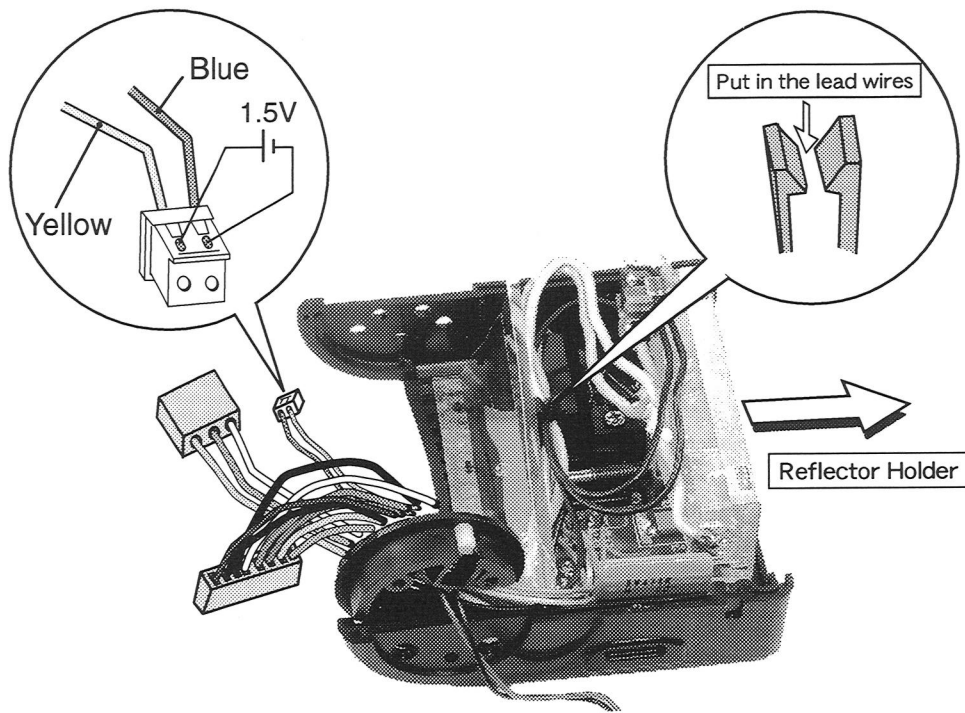
- Attach the screw (#32).
- Attach the 2pcs. of the screws (#33).
- Pass the lead wires through the retaining ring B (#100).
- Pass the lead wires through the rotary base unit.
- Mount the sheet (#74).



- Attach the screw (#32).
- Attach the 2pcs. of the screws (#33).
- Pass the lead wires through the rotary base unit.
- Mount the sheet (#74).

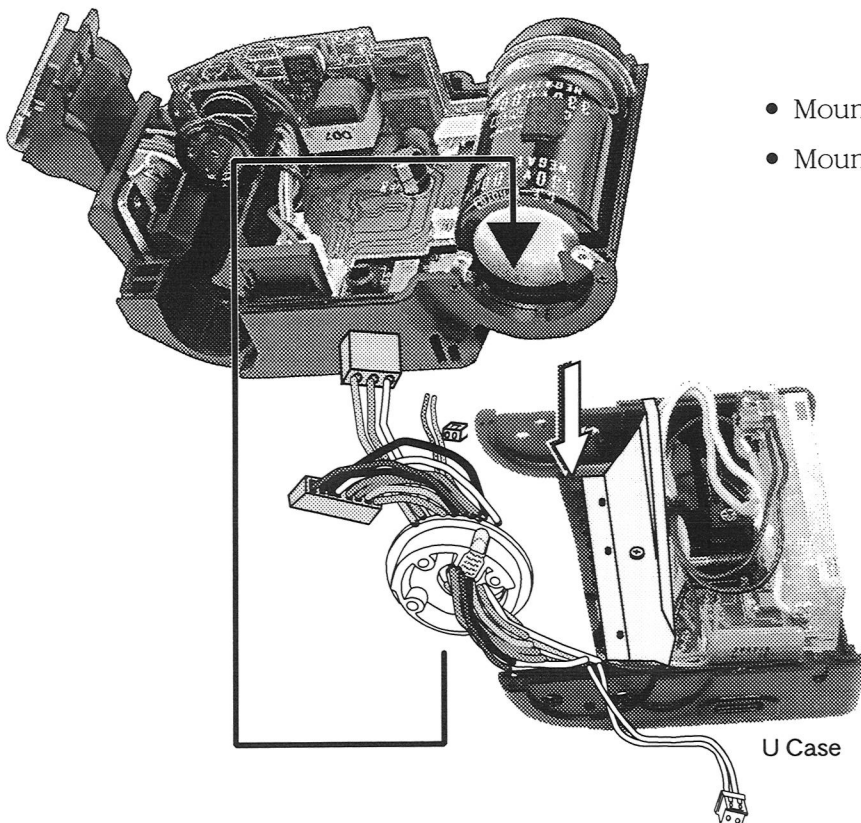


- Make the motor run by a battery as shown in Figure above to move the reflector holder in an arrow direction.
- Attach the screws (#33) and (#32).

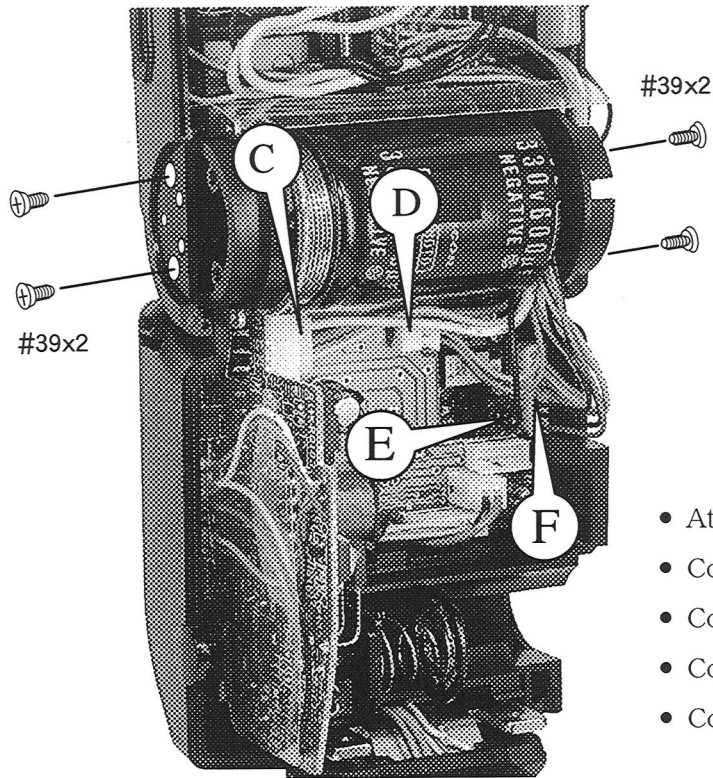


- Make the motor run by a battery as shown in Figure above to move the reflector holder in an arrow direction.
- Arrange the lead wires as shown in Figure.

4. U Case

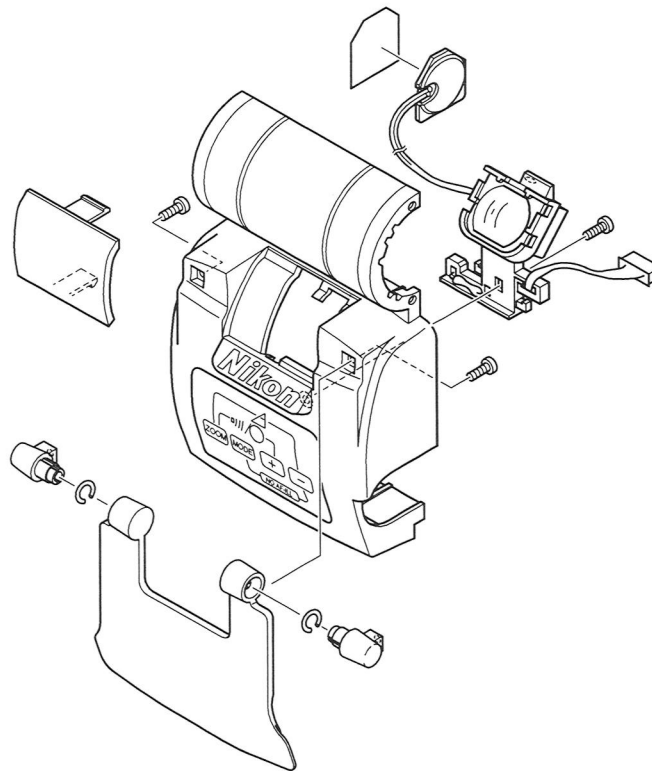


- Mount the rotary base unit.
- Mount the U case.

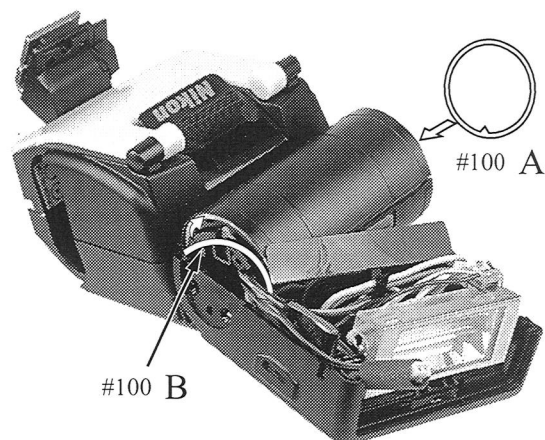
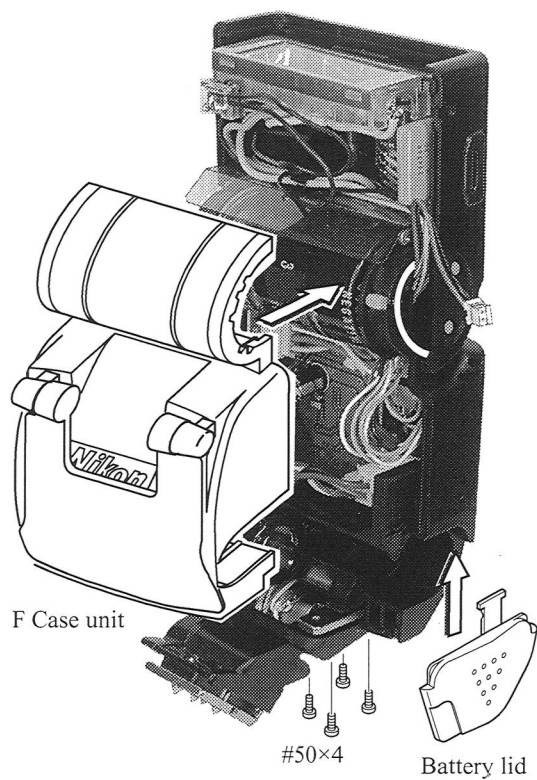


- Attach the 4 pieces of the screws (#39).
- Connect the connector F.
- Connect the connector E.
- Connect the connector D.
- Connect the connector C.

5. F Case



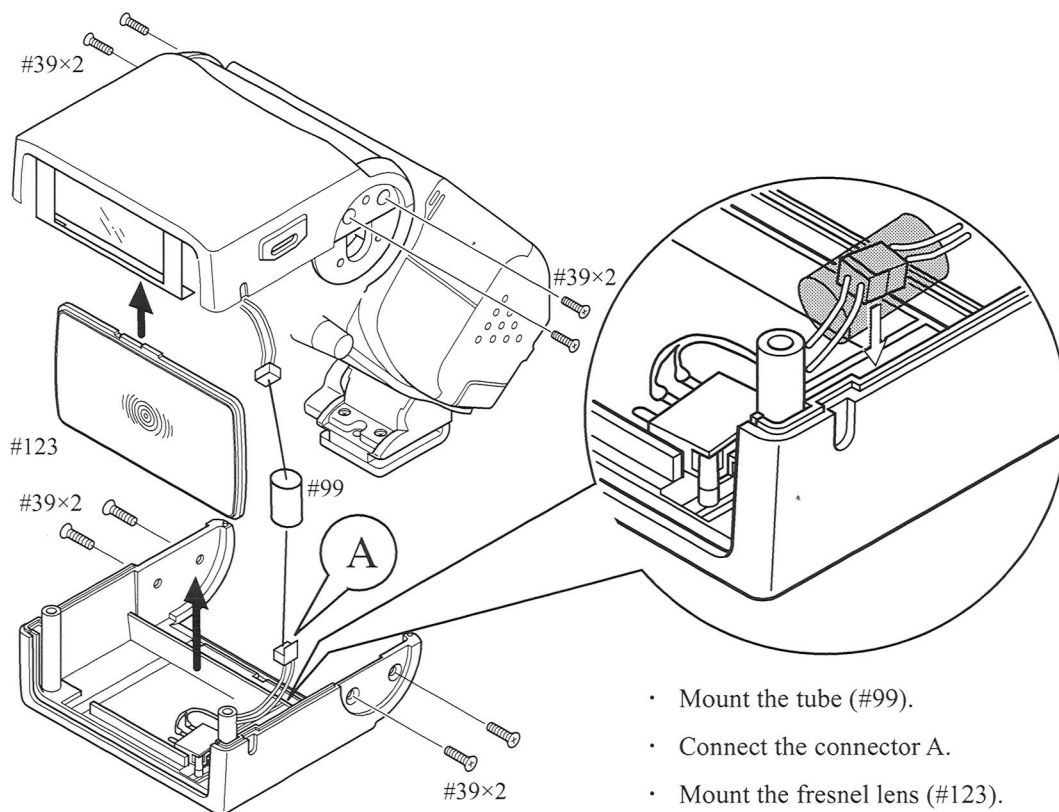
※ Products of which serial number is 2013900 or 3001591 and after



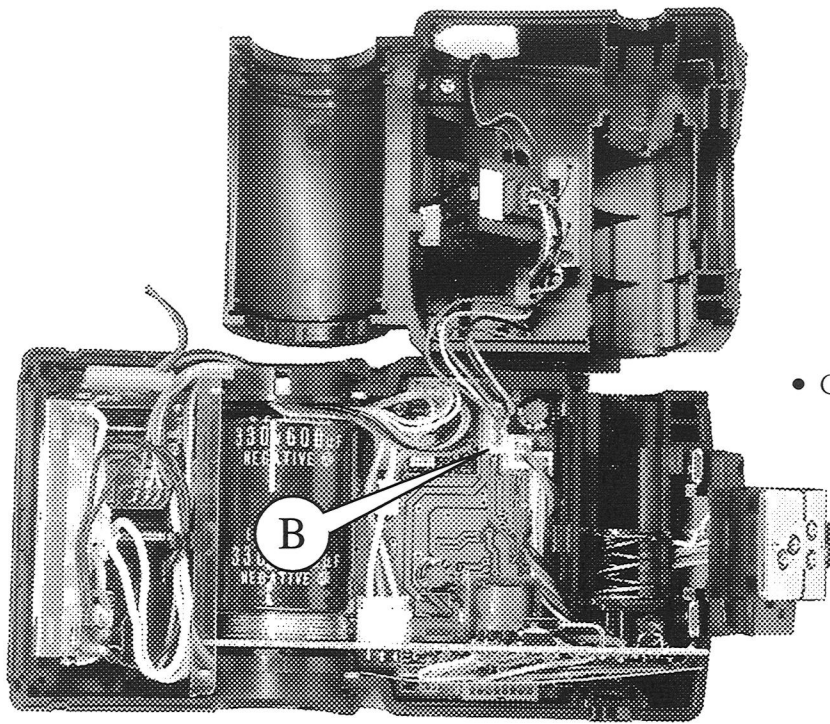
- Mount the F case while mounting the battery lid.
- Attach the 4 pieces of the screws. (#50).
- Set the flash unit in the position shown in Figure above.
- Attach the retaining ring A (#100).
- Attach the retaining ring B (#100).

Notes: Be sure to use a new retaining ring (#100) for repair.

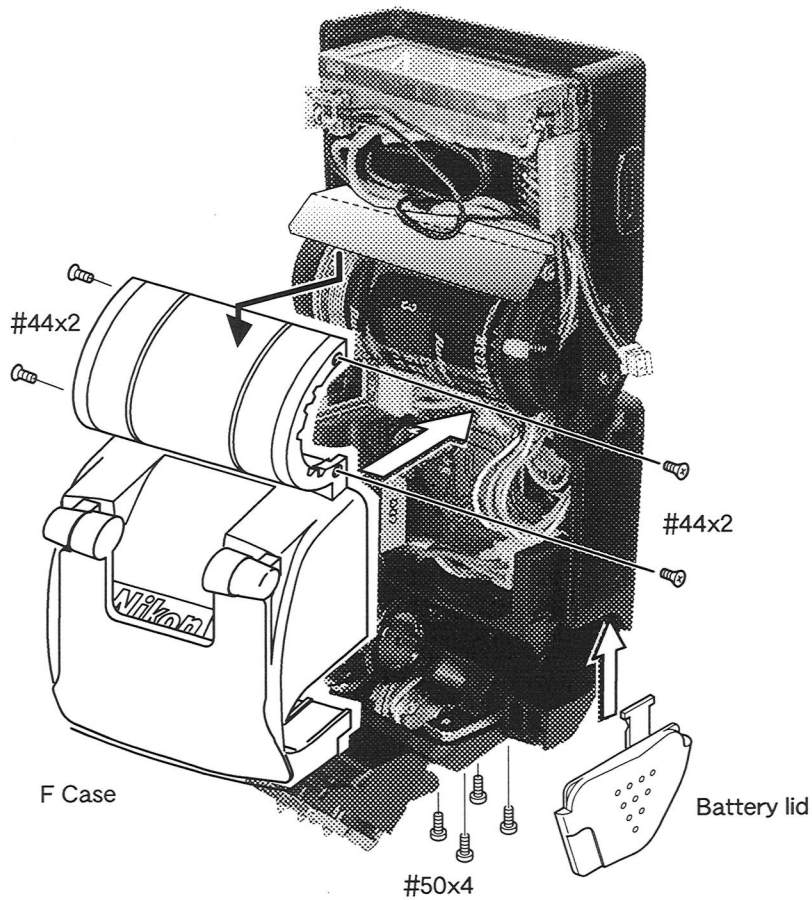
6a. L Case



- Mount the tube (#99).
- Connect the connector A.
- Mount the fresnel lens (#123).
- Mount the L case (#L).
- Attach the 8 pieces of the screws (#39).

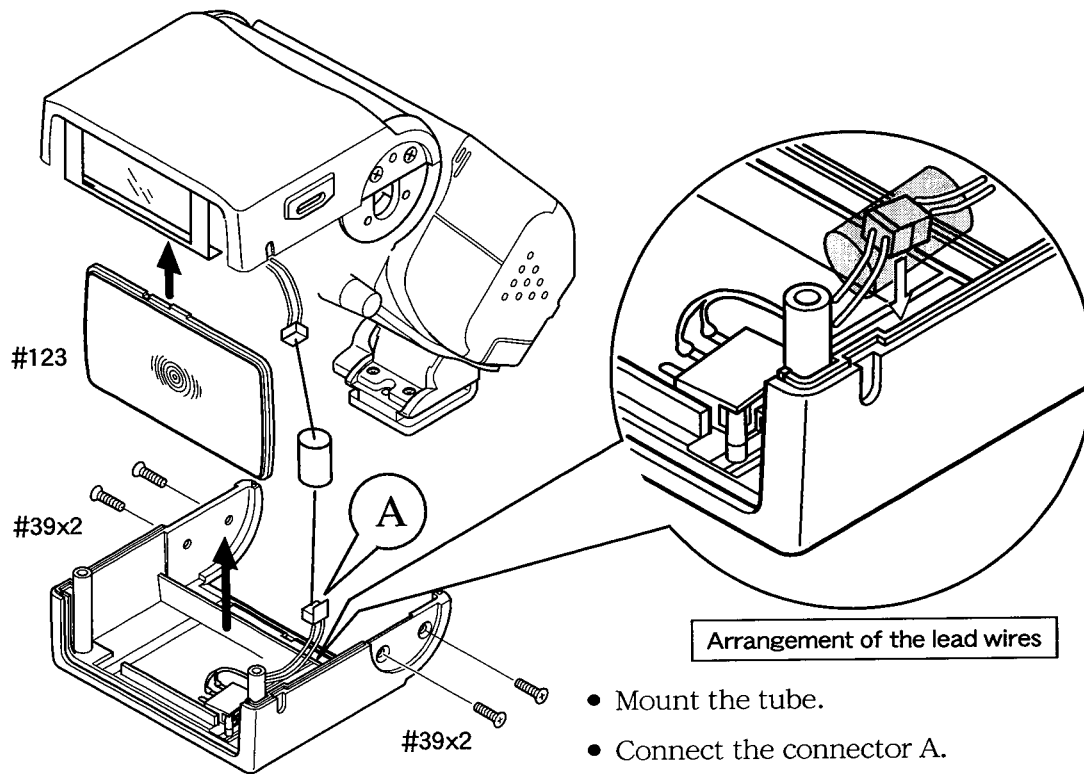


- Connect the connector B.



- Mount the F case while mounting the battery lid.
- Attach the 4 pieces of the screws (#44).
- Attach the 4 pieces of the screws. (#50).

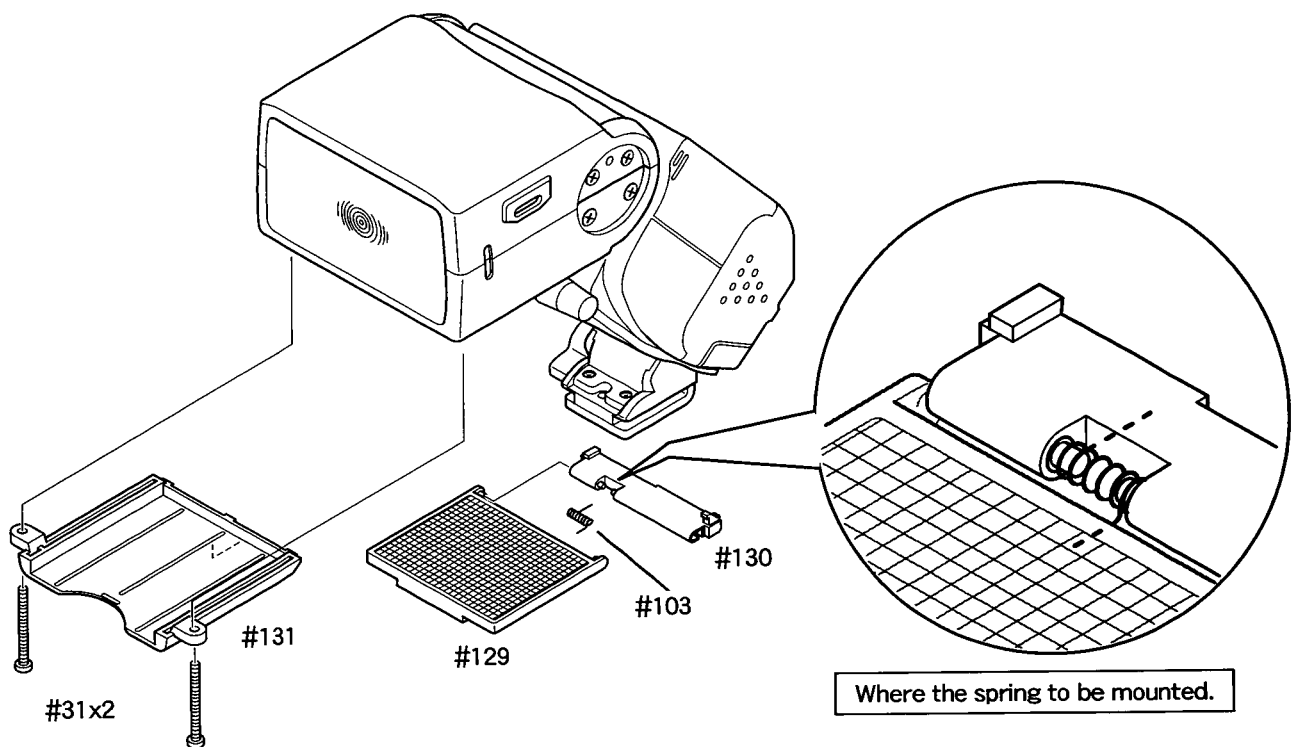
6. L Case



Arrangement of the lead wires

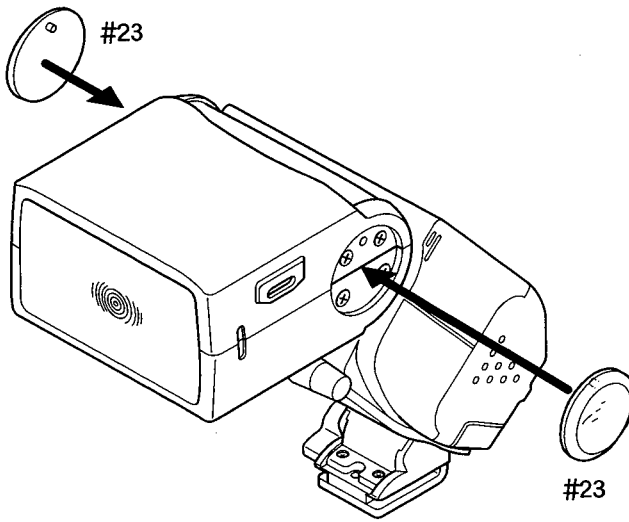
- Mount the tube.
- Connect the connector A.
- Mount the fresnel lens (#123).
- Mount the L case (#L).
- Attach the 4 pieces of the screws (#39).

7. Wide Panel



Where the spring to be mounted.

8. Slide Rubber



ADJUSTMENT

The whole adjustment is performed electrically by using PC, please follow the instructions of the inspection and adjustment software (J18325).

Equipment in use

(For how to connect, refer to SB-28 Repair Manual.)

1. Inspection and adjustment software (J18325)
2. Personal computer
3. High speed I/O tool (J15335) upgraded for SB-50DX

(For how to upgrade the tool that you use at present, refer to Technical Information.)

4. Flash-meter
5. Regulated power supply (0-6V, 4A output)
6. Standard reflection board

The upgraded high speed tool (J15335) can be used for the adjustment of SB-28 and SB-28DX as it is.

Adjustment items

1. "WRITING INITIAL DATA"
2. "VOLTAGE ADJUSTMENT (MAIN CAPACITOR)"
3. "QUANTITY OF LIGHT ADJUSTMENT"
 - 3-1. "MANUAL MODE INSPECTION AND ADJUSTMENT"
 - 3-2. "PRE-FLASH INSPECTION AND ADJUSTMENT"
 - 3-3. "D-TTL INSPECTION AND ADJUSTMENT"
4. "FLASH TIMES INSPECTION"

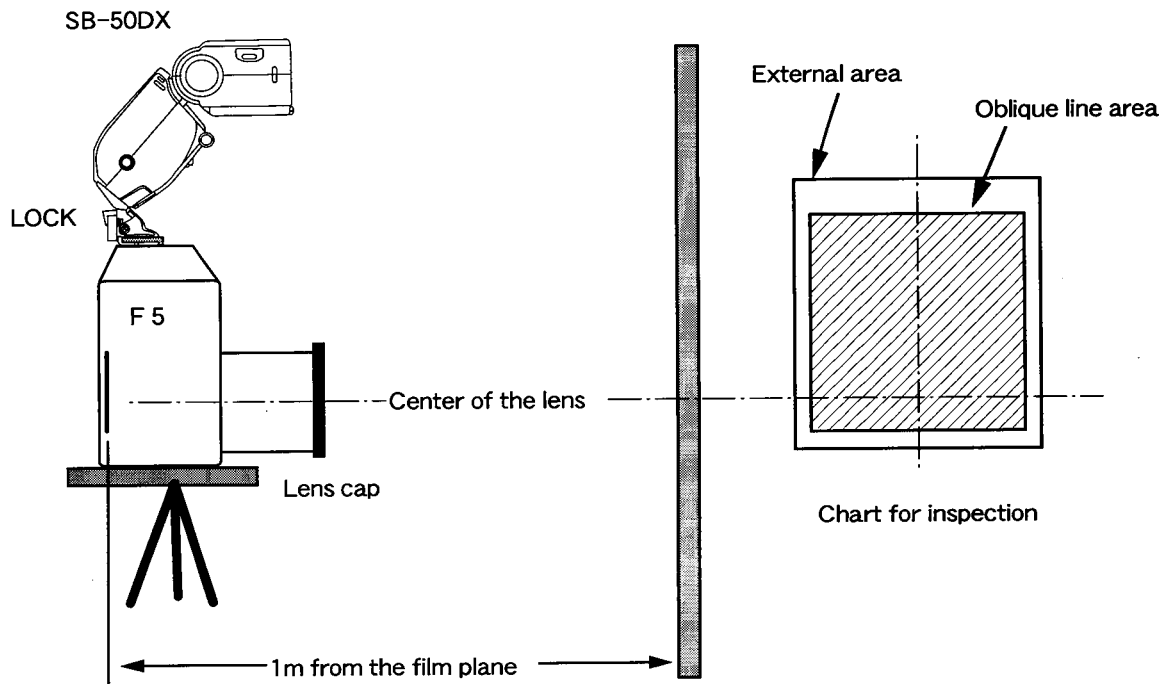
TOOL

* New tool

Tool No.	Name	Remarks
* J18325	SB-50DX Inspection /Adjustment Software	IBM 3.5 inch
J15335	High speed I/O tool	Notes

Notes: It is necessary to upgrade the tool.

INSPECTION OF FOCUSING LIGHT



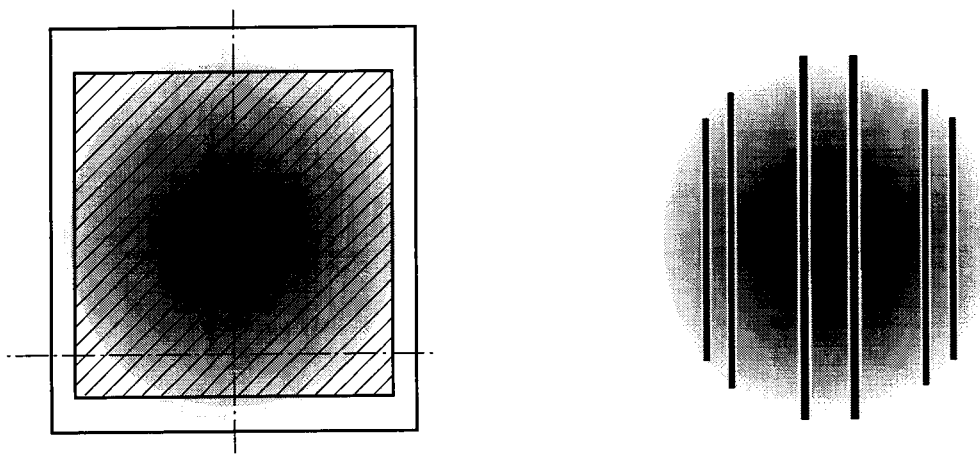
Turn on the focusing light of the SB-50DX after arranging them as shown figure above.

The light of the FL module should be irradiated on the oblique line area and external area of the chart as Figure below.

Also the vertical stripes of the irradiated light should be distinct in light and darkness.

If the irradiated light of the FL module is out of the chart, it is impossible to adjust the FL module angle, therefore, replace the LED unit (#F).

The chart for inspection is attached in the last page of Repair Manual, please copy it to use.



Circuit Configuration

SB-50DX consists of a customized IC, 8-bit CPU, E2PROM, and other peripheral components.
(Refer to the block diagram in page E-4).

Battery

The battery pack is built in SB-50DX and there are two CR123A lithium batteries. Equivalents, such as CR123R, DL123A, K123LA and EL123AP lithium batteries, can also be housed.

Voltage Increase Circuit

This circuit increases the built-in battery voltage and charges the main capacitor to the voltage specified (330V). When the battery voltage is lowered to 3V or less, the increase is temporarily stopped by the voltage monitoring circuit. In other conditions the operation is stopped by command of the CPU. The voltage detection circuit outputs the ready light voltage and the increase stop voltage to A/D input terminals on the CPU.

Safety Circuit

When the battery is set regardless of the power supply condition for the SB-50DX, this circuit always monitors the main capacitor terminal voltage.

It prevents damage to the main capacitor by the lamp's flashing when the voltage increases to more than the specified voltage value.

Emission Control Circuit

This circuit starts the emission of the flash tube on the basis of the emission start signal (TG circuit) output from the customized IC, and stops it on the basis of the emission stop signal (STP circuit).

Customized IC

It consists of a data communication circuit, decoder circuit, camera interface, slave circuit, voltage monitoring circuit, photometry circuit, TG circuit, STP circuit and AF extra light circuit.

Data Communication Circuit

It consists of CPU, 5-bit signal lines and STB terminal.

The up signal of the STB signal sets the address of the customized IC.

The down signal of the STB signal reads and writes the data to the customized IC.

Decoder Circuit

The address received on the data communication circuit is decoded and various settings are performed on each block inside the circuit.

Camera Interface Circuit

The electrical connection to the camera passes through the foot section: and the data are transmitted to the camera, or received from the camera, depending on the signal from the CPU. The I/O signals to and from each terminal on the foot section contact are also controlled.

Slave Circuit

SB-50DX starts flashing according to the light input from the master strobe to the built-in slave sensor, and stops it on the basis of the light input stop.

Voltage Monitoring Circuit

Increase in the voltage increase circuit is temporarily stopped when the power voltage drops to less than 3V, by monitoring the battery voltage in real time.

Photometry Circuit

The emission amount is decided by the count of the removing electric charge, of which the luminous energy is integrated by the light receiving element in the integral capacitor of the integral circuit, using the rated current set in advance, whenever the electric charge exceeds the threshold voltage value.

TG Circuit

The emission start signal is output depends on the emission command signal from the photometry circuit, slave circuit, decoder circuit and camera interface.

STP Circuit

The emission stop signal is output depends on the emission stop signal from the photometry circuit, slave circuit, decoder circuit and camera interface.

AF Assist Light Circuit

The extra light is turned depending on the data received in the data communication with the CPU, or on the emission signal from the CRY terminal. It is turned off by the command of the CPU.

8-Bit CPU

It controls communication with the camera through the customized IC. It controls the data setting in the custom IC, the reading of the switch matrix, the power supply, the AF extra light, the LCD indication, the zoom head drive, the main capacitor voltage detection, the ON/OFF switch of the ready light, the strobe-built-in camera strobe-pop-up detection and the E2PROM.

Ready Light

The voltage charge is decided by the CPU's A/D of the voltage output from the voltage detection circuit. When it reaches the point at which it should turn the ready light to ON, the CPU turns on the ready light. At the same time, the signal to turn on the ready light in the camera finder is transmitted to the custom IC using the 5-bit data communication.

E²PROM

It memorizes the conditions for using the push switch, the requirements for the photometry circuit, timer circuit set value, and other data.

LCD

Light adjustment mode, TTL exposure corrected value, TTL under rate, lighting section set position, and zoom value are all indicated.

Motor Driving Circuit

This is for setting the lighting section emission angle. The lighting section is set at the position specified according to the command from the CPU.

Built-in Pop-up Detection Mechanism

It is located at the foot section and the pop-up of the built-in strobe is detected mechanically.

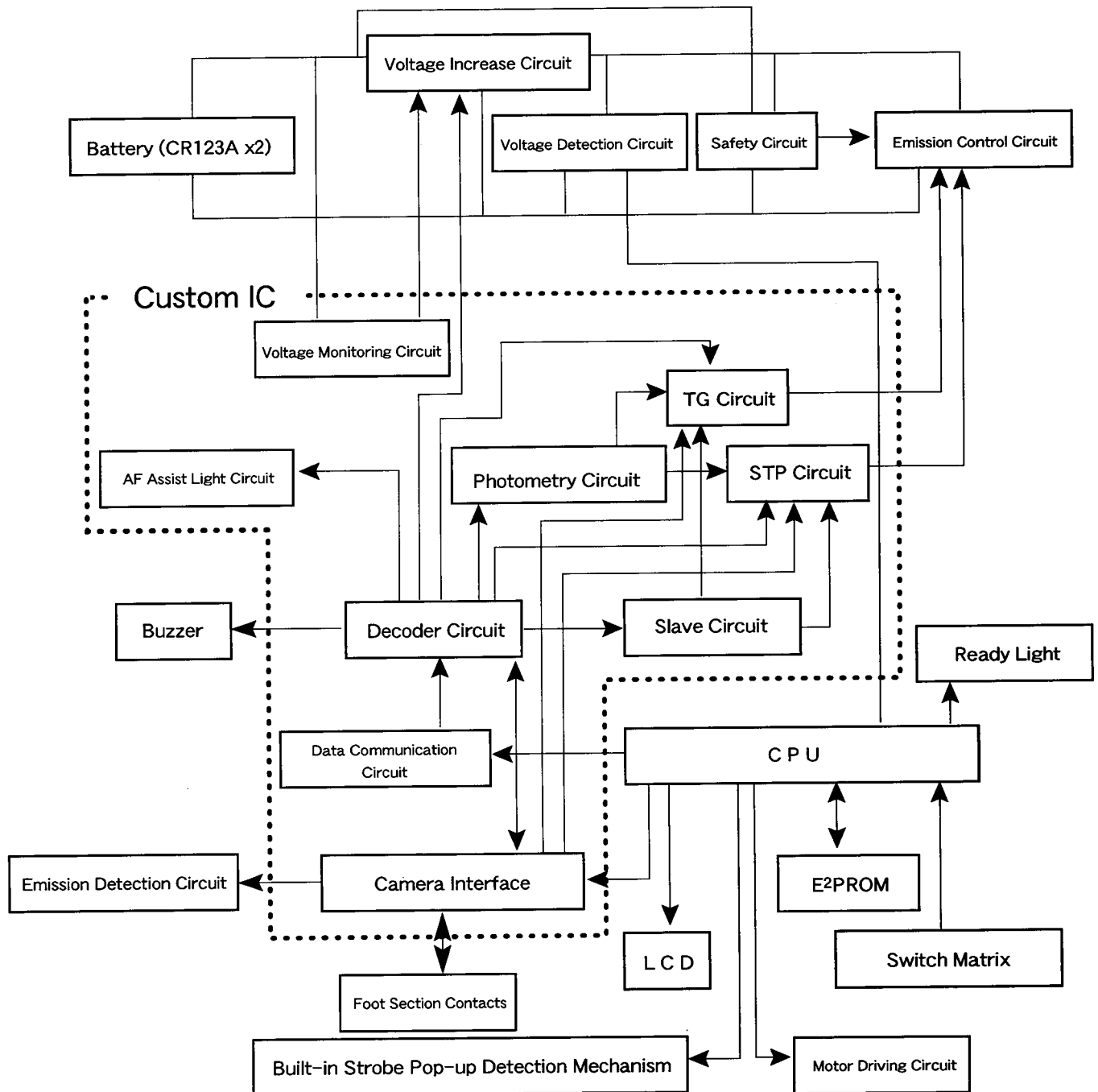
Emission Detection Circuit

The light of SB-50DX is flashed by detecting electrically the trigger noise generated when the built-in strobe is flashed.

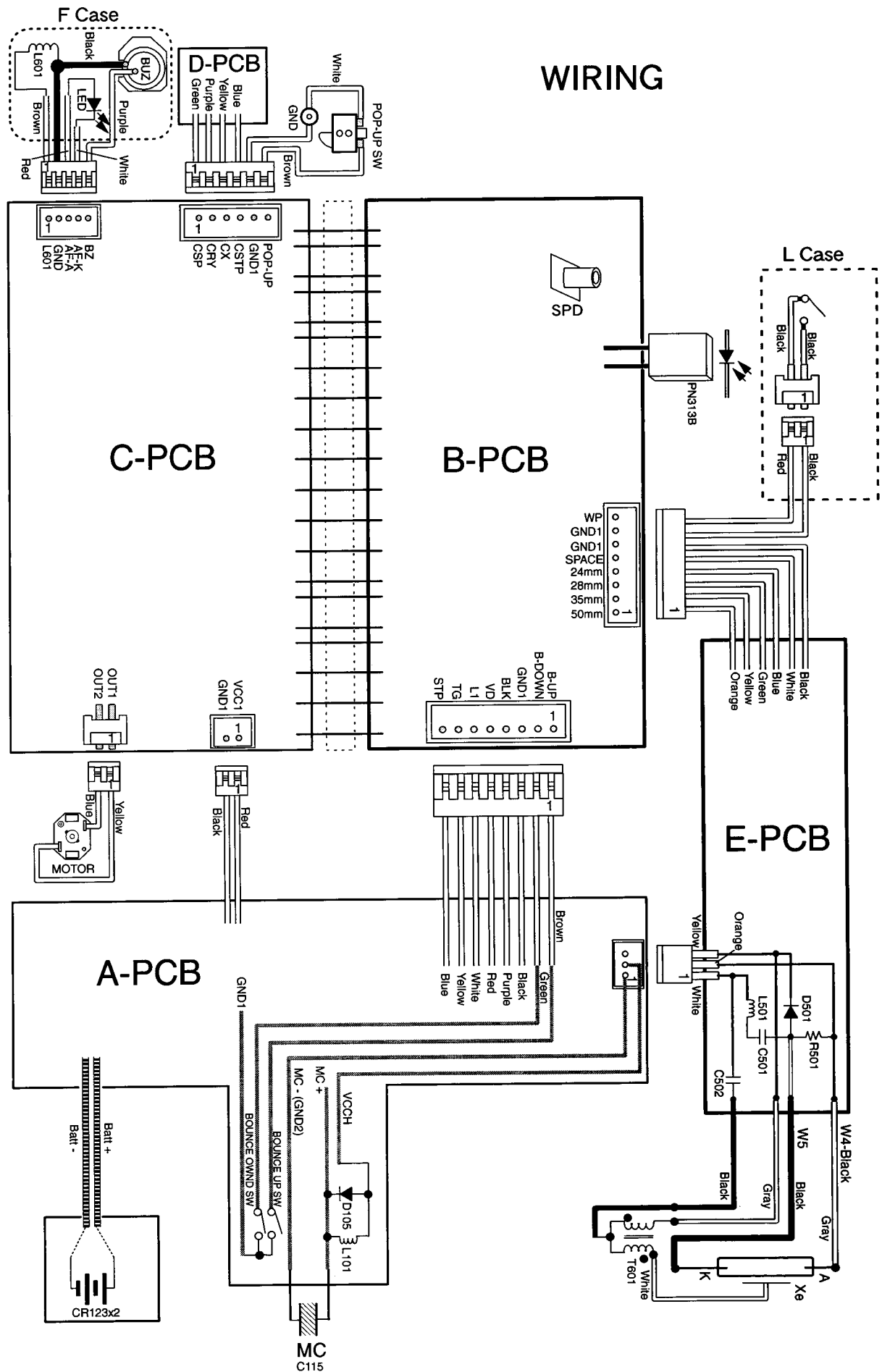
Foot Section Contact

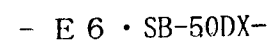
There are 5 contacts; CX, CRY, CSTP, CSP and GND which are connected to the camera electrically.

Block Diagram



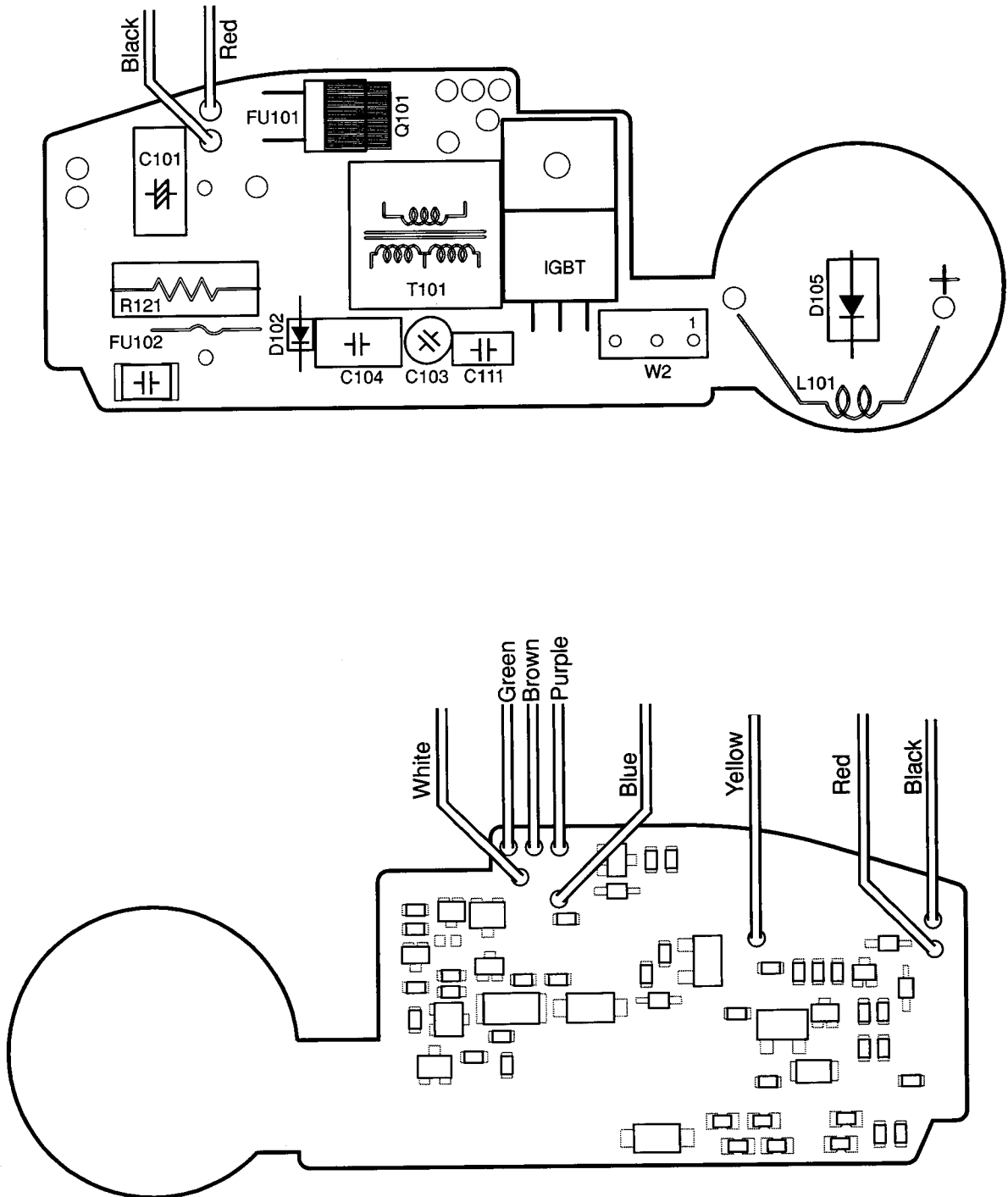
WIRING



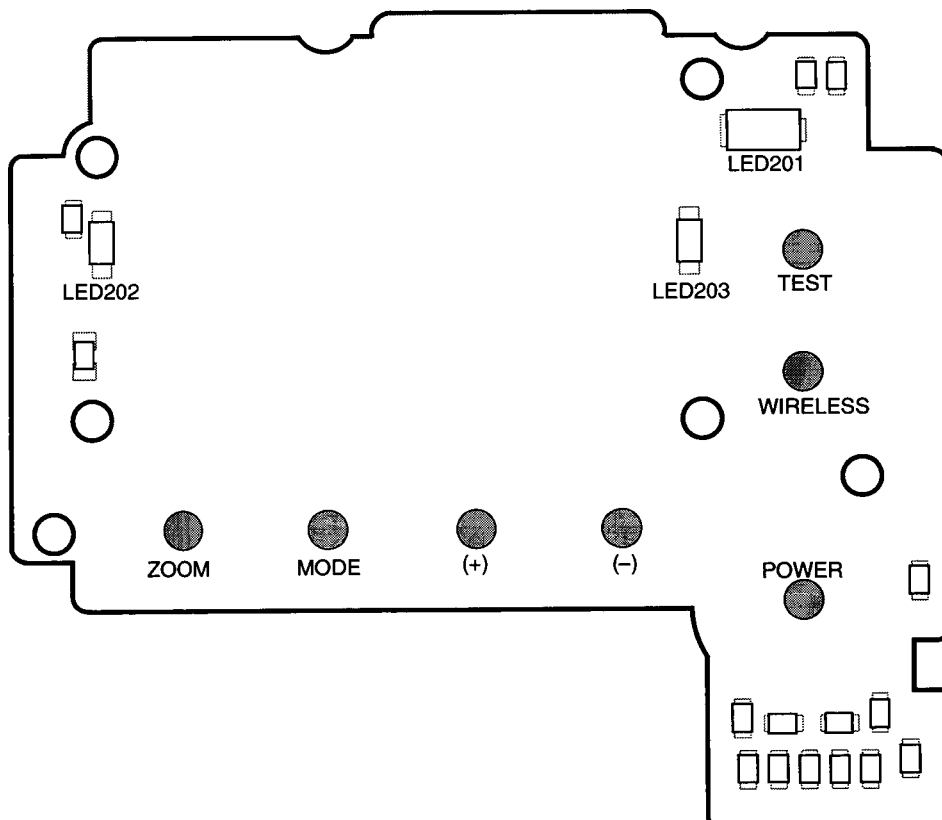
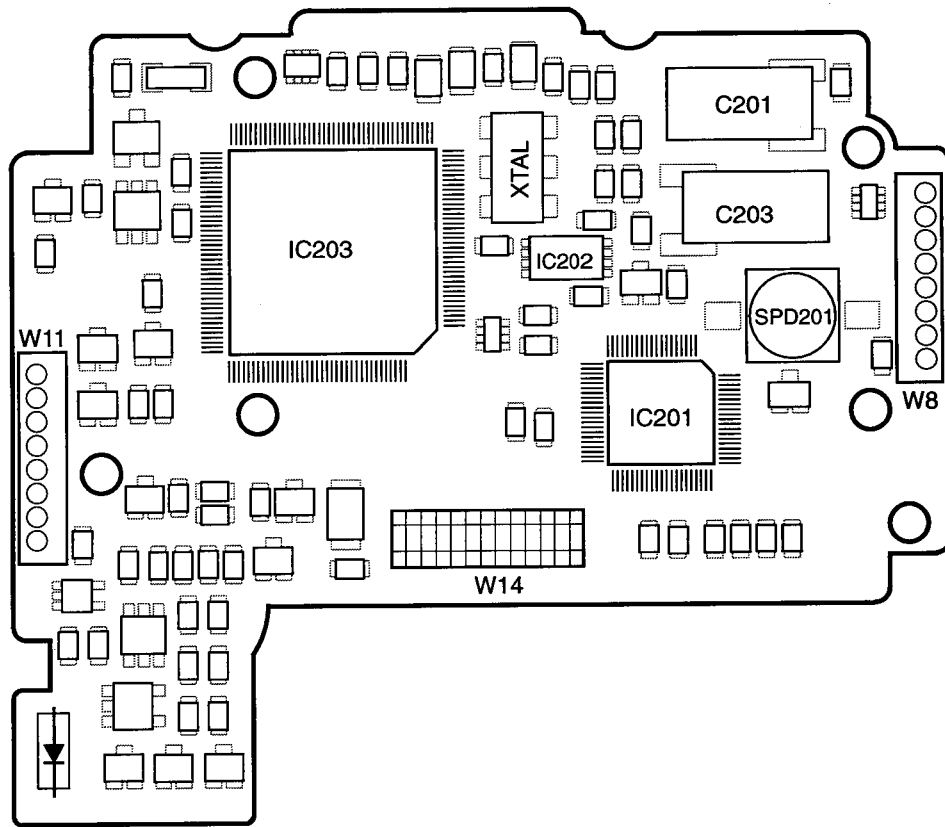




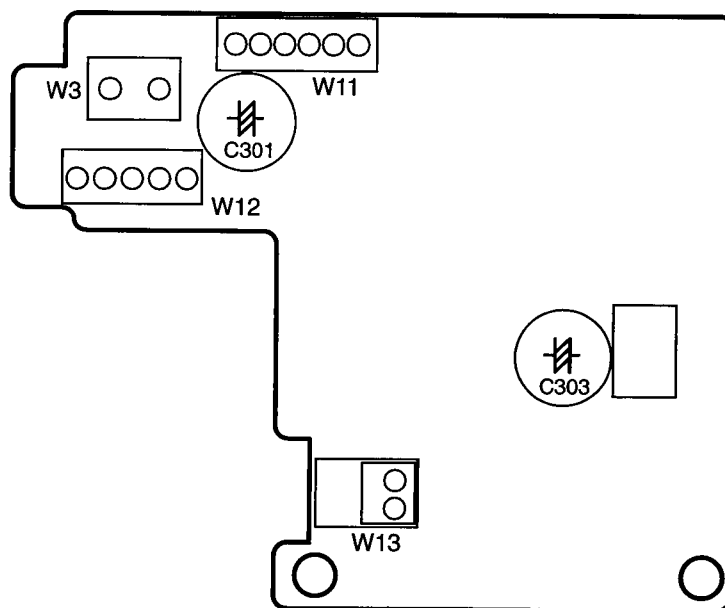
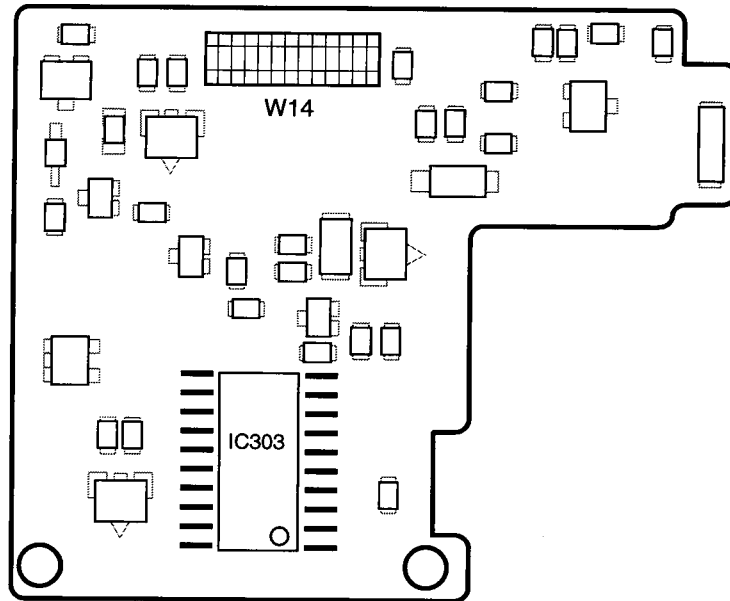
A-PCB



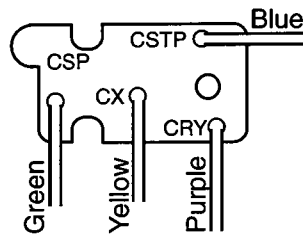
B-PCB



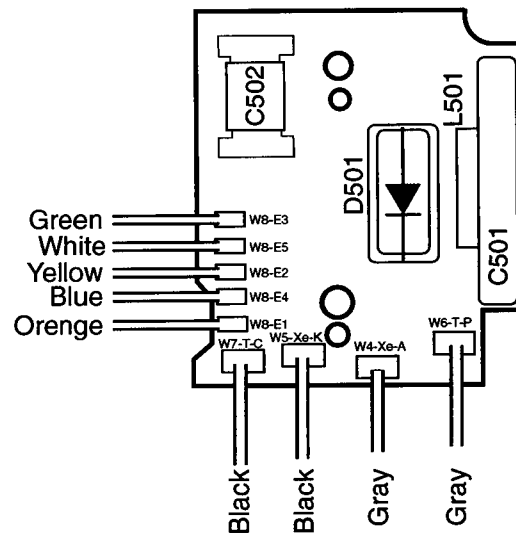
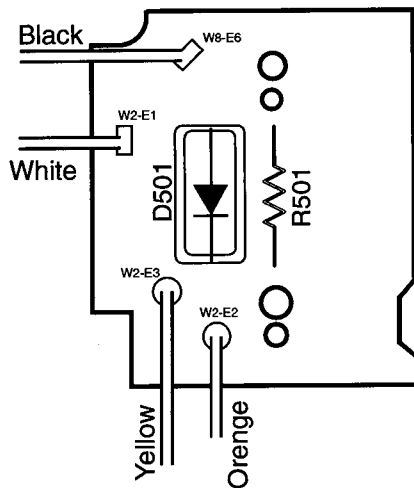
C-PCB



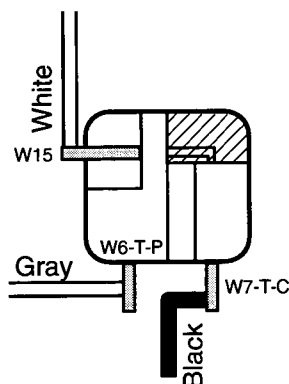
D-PCB



E-PCB



TRIGGER COIL



E²PROM DATA

Address	Data	Address	Data
0	Main capacitor voltage (330V,290V,285V,265V,260V)	66	
↓		67	
4		↓	
5	SB control	127	
↓		128	SB control
12		129	
13	Quantity of light adjustment (Pre-flash and Test-flash)	130	
14		131	
15		↓	
16		143	
17	Quantity of light adjustment (Pre-flash and Test-flash)	144	Flash times
18		145	
18		146	
20		↓	
21	Quantity of light adjustment (Pre-flash and Test-flash)	255	
↓			
25			
26			
↓			
31			
32	Full-flash adjustment		
33			
34	D-TTL adjustment		
35	SB control		
36			
↓			
60			
61	SB control		
62			
63	Check SAM data		
64			
65			

* Addresses without description are not used.

SB-50DX

